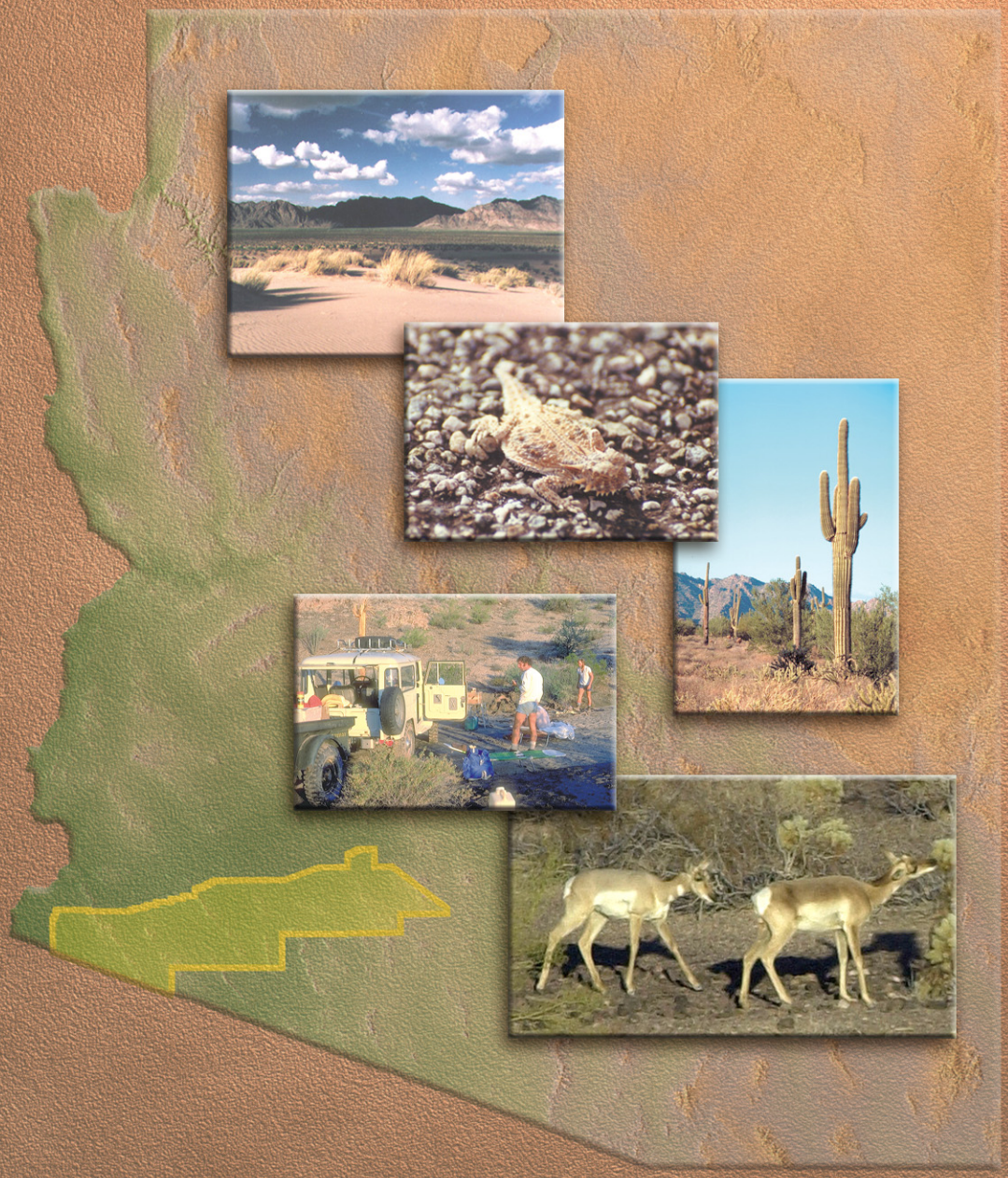
Proposed Integrated Natural Resources Management Plan

Barry M. Goldwater Range Community Report



Lead Agencies:

Departments of the Air Force, Navy, and Interior

Cooperating Agency:

Arizona Game and Fish Department

FEBRUARY 2003

PRIVACY ADVISORY

Comments on the draft Environmental Impact Statement (EIS) for the proposed Integrated Natural Resources Management Plan are requested. Letters or other public comment documents provided to the Department of the Air Force or Department of the Navy may be published in the final EIS. Information provided will be used only to improve upon issues identified in the draft EIS. Comments will be addressed in the final EIS and made available to the public. However, only the name of the individual and specific comments will be disclosed.

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February 2003

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Table of Contents

Table of Contents

Page

Proposed Integrated Natural Resources Management Plan
Barry M. Goldwater Range Community Report

Table of Contents

Page

List of Tables

List of Figures

Why the Community Report was Prepared

The Barry M. Goldwater Range (BMGR) in southwestern Arizona is a major U.S. military training range. This Community Report is a summary of the draft Environmental Impact Statement (EIS) for a proposed Integrated Natural Resources Management Plan (INRMP) for the BMGR. This report and the draft EIS were prepared through an interagency partnership between the U.S. Air Force, U.S. Marine Corps, U.S. Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), and Arizona Game and Fish Department (AGFD). The draft EIS is a complex document that examines five alternative strategies for managing the natural and cultural resources of the range. Each strategy identifies a comprehensive management program composed of 17 separate management elements. The draft EIS identifies the expected impacts (beneficial and adverse) of each of the five alternative management strategies by assessing the potential environmental effects of each of the 17 management elements of each strategy relative to 20 separate components of the environment. The resulting draft EIS is more than 1,100 pages long and contains detailed information regarding the studies conducted.

This Community Report was prepared for people who want to know the basic facts about the INRMP planning process and the potential environmental impacts associated with the proposed alternative management strategies, but are not interested in the details of the draft EIS analysis. The community report does not take the place of the draft EIS, which includes detailed resource analyses, extensive data tables, maps, literature citations, and appendices. The draft EIS was prepared to help federal and state decision makers understand the relative environmental consequences of the alternative management strategies—including their potential to protect, restore, and enhance the environment—before they select a resource management plan for the BMGR.

If you are interested in an overview of the BMGR, the alternative management strategies for the proposed INRMP, and how theses strategies might affect the environment, this Community Report is a good place to start. If you want more information, the draft EIS is available for your review. For information on the availability of the draft EIS or other concerns about the proposed INRMP contact:

Ms. Teresa Nelson
Public Affairs Officer
Luke Air Force Base
56th Fighter Wing Range Management Office
Telephone (623) 856-3823 Extension 245

If you would like to comment on the draft EIS for the proposed INRMP, please send your comments to:

BMGR INRMP
P.O. box 67132
Phoenix, Arizona 85082-7132

The 60-day comment period for the draft EIS is calculated from the date the Notice of Availability appears in the Federal Register. The comment period is expected to close on or about 22 April 2003.

BMGR Renewal and Military Purposes

Renewal

On 5 September 1999, the BMGR registered its 58th year as one of the nation's finest and most productive reservations for training military aircrews. The range, which encompasses 1,733,921 acres (2,709 square miles), is used by the U.S. Air Force, U.S. Marine Corps (hereafter Air Force and Marine Corps), and other Department of Defense (DoD) components primarily to train military aircrews to fly air combat missions. To a lesser extent, the range is also host to some other national defense-related activities, most of which support or are associated with air combat training.

One month after its 58th anniversary, on 5 October 1999, Congress reconfirmed the nation's continuing need for the BMGR by passing the Military Lands Withdrawal Act (MLWA) of 1999 (Public Law [P.L.] 106-65). This Act extends authorization for the BMGR for 25 years until 2024 and provides that the DoD may apply for an extension to that authorization should there be a continuing military need for the range beyond 2024.[1] Under the Act, the range lands are withdrawn[2] from all forms of appropriation under the general land laws—including the mining, mineral leasing, and geothermal leasing laws—and are reserved[3] for continued military use.[4] Land jurisdiction over the eastern (BMGR—East) and western (BMGR—West) portions of the BMGR is assigned to the Secretaries of the Air Force and Navy, respectively. The division between BMGR—East and BMGR—West is defined by the roughly north-south boundary separating restricted airspaces[5] R-2301E and R-2301W (Figure 1).

Military Purposes

The MLWA of 1999 specifies that the range be used by the Secretaries of the Air Force and Navy for the following purposes:

- an armament and high-hazard testing area
- training for aerial gunnery, rocketry, electronic warfare, and tactical maneuvering and air support

Weapons delivery training requires dedicated land and airspace to protect public safety and maintain needed security.

- equipment and tactics development and testing; and other defense-related purposes consistent with those specified in this paragraph[6]

These purposes are consistent with the legacy of military use that has occurred at the BMGR since its inception in 1941.

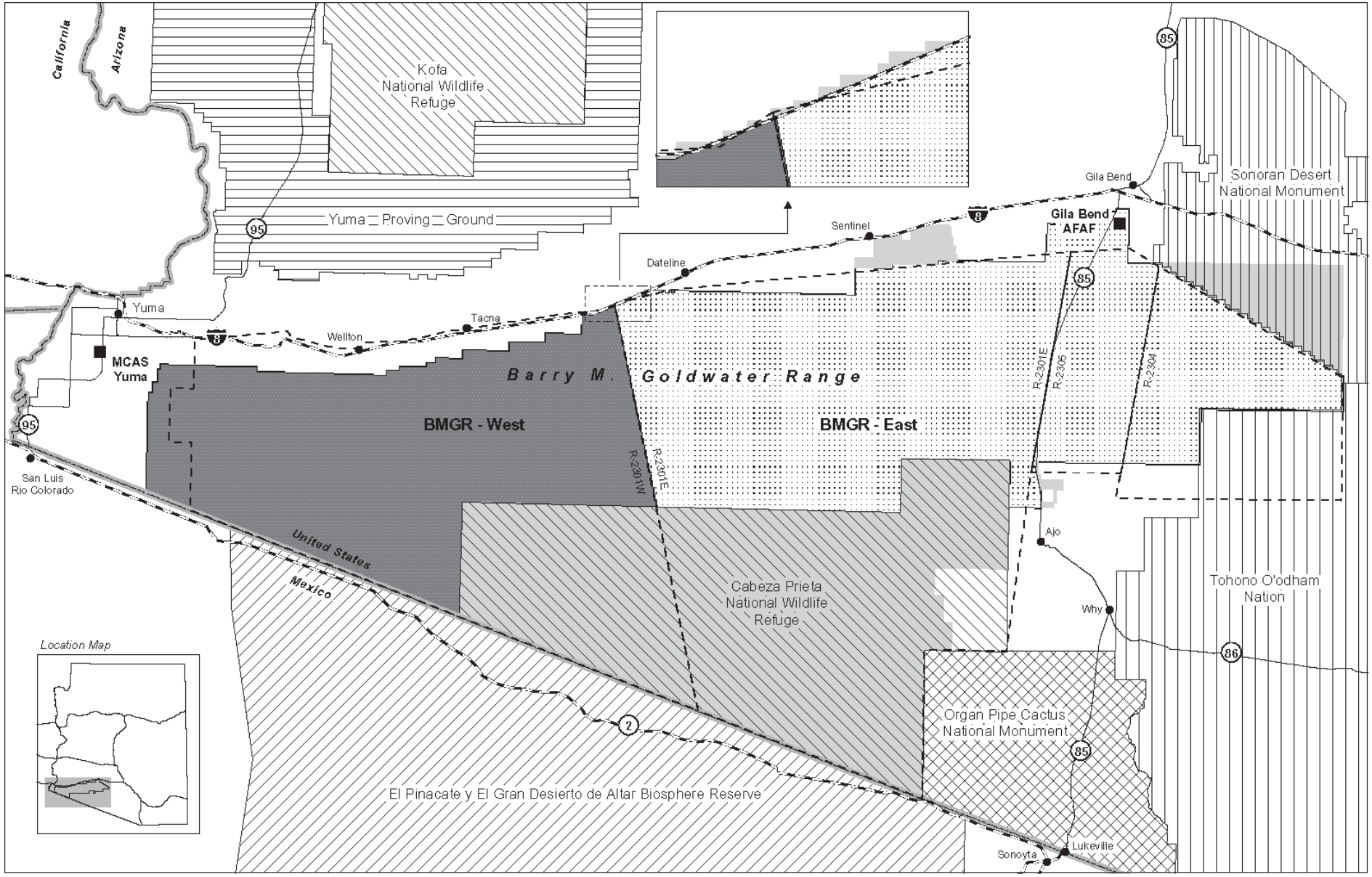
Proposed INRMP and Its Relationship to the EIS

Proposed INRMP

The MLWA of 1999 requires that the Secretaries of the Air Force, Navy, and Interior jointly prepare an INRMP for the BMGR.[7] As stipulated by the Act, the purposes of the INRMP are to provide for the:

> … proper management and protection of the natural and cultural resources of [the range], and for sustainable use by the public of such resources to the extent consistent with the military purposes [of the BMGR]…[8]

The MLWA also directs that the INRMP must be prepared and implemented in accordance with the Sikes Act.[9] The Sikes Act sets forth the Nation's resource management policies and guidance for U.S. military installations and requires the preparation of INRMPs for all



BMGR Land Area as Renewed by the MLWA of 1999

Figure 1

installations with significant natural resources, including those (such as the BMGR) composed of withdrawn lands. The Sikes Act provides that the "… Secretary of Defense shall carry out a program to provide for the conservation and rehabilitation of natural resources on military installations…" and that an INRMP is to be prepared to facilitate implementation of that program.[10] The Sikes Act specifies that:

> Consistent with the use of military installations to ensure the preparedness of the Armed Forces, the Secretaries of the military departments shall carry out [the aforementioned program] to provide for—
>
> (A) the conservation and rehabilitation of natural resources on military installations;
> (B) the sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping and non-consumptive uses; and
> (C) subject to safety requirements and military security, public access to [the BMGR] to facilitate the use.[11]

As indicated by the preceding provisions of the MLWA of 1999 and Sikes Act, the resource conservation components of the pending INRMP for the BMGR will in many ways be comparable to those developed for many other federal land management plans including existing or pending plans for the nearby Organ Pipe Cactus National Monument (NM) and the adjacent Cabeza Prieta National Wildlife Refuge (NWR) and BLM lands. The feature of the pending INRMP that will distinguish it most sharply from most other federal land management plans, however, is that implementation and control of the primary land use of the BMGR—which is the support of designated military purposes—is not subject to review or modification through the development of the INRMP. Decisions regarding current and future military land use at installations subject to Sikes Act planning are assessed through other processes, which may include planning under the auspices of the National Environmental Policy Act (NEPA) of 1969[12] or other applicable environmental laws, but are not reviewed through the preparation of an INRMP. Rather, land management on a military installation must be consistent with the military purposes of the installation.

Javelina are most commonly found in desert riparian and paloverde-mixed cactus scrub habitats in eastern parts of the BMGR.

In the case of the BMGR, Congress previously determined, through the MLWA of 1999, that this range would be used first and foremost for specific national defense purposes.[13] Management of natural resources and public access within the BMGR must be consistent with these specified national defense purposes. This national defense mandate for the BMGR, however, does not preclude implementing a management plan that provides for effective conservation, protection, and rehabilitation of natural resources; protection of cultural resources; and sustainable public use. Given the character of the military mission at the BMGR, there are significant opportunities to use, protect, and conserve resources within the range and great latitude available to incorporate effective management methods.

Wheel rims, axles, and a chassis are all that remain of a horse-drawn buggy sitting alongside a historic road that is now part of the range.

Nearly all recreational visitors to the BMGR rely on four-wheel drive vehicles. The range road network is a central focus of public access management.

Requirement for the EIS

The draft EIS, to which this Community Report is a companion summary, was prepared to support development of the proposed INRMP for the BMGR. The draft EIS was prepared in accordance with NEPA, and Air Force and Marine Corps guidances for implementing NEPA and preparing INRMPs, which require consideration of potential environmental concerns as early as possible in the development of proposed federal programs, projects, and activities.

Five alternative strategies for managing natural and cultural resources and public access within the BMGR are addressed by the draft EIS. Each of these alternative management strategies represents a potential resource management program, or an INRMP, for the BMGR. A final EIS—which will incorporate public, tribal, and government comments on the draft EIS and on this Community Report—will be prepared for the proposed INRMP. The final EIS will also be available to the public. The Record of Decision (ROD) for the final EIS will identify the alternative management strategy selected for the proposed INRMP and implementation on the BMGR.

An INRMP will be prepared following publication of the ROD in the *Federal Register*. This document will be based on the alternative management strategy selected in the ROD for the INRMP and will be used to implement that alternative. The document will be composed of material extracted from the final EIS and the forthcoming ROD. Consistent with the MLWA of 1999; the Sikes Act; and DoD, Air Force, and Marine Corps guidance for preparing INRMPs, including DoD Instruction 4715.3, major features of the final INRMP will include the following:

- purpose, authority, and development history of the INRMP
- future review and amendment procedures for the INRMP
- location and mission of the BMGR
- a brief land use and management history of the BMGR
- current and foreseeable future military missions and land use
- non-military agency missions and land use
- incorporation of the Integrated Cultural Resources Management Plan (ICRMP) for the BMGR by reference
- provisions for meeting trust responsibilities and access and consultation requirements relative to affected Native American tribes
- public access opportunities and conditions
- overview of the BMGR environment
- resource management goals
- selected resource management alternative
- projects and schedule planned to implement the selected management alternative
- follow-on requirements under NEPA, or other regulatory laws, to implement specific planned management projects
- standard operating procedures for routine management activities

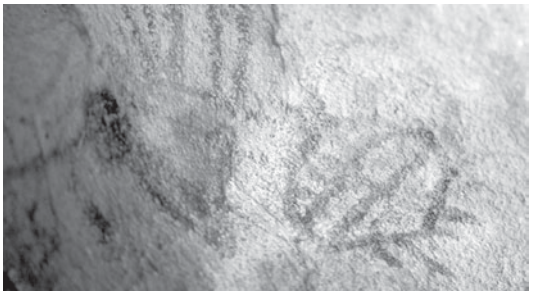
EIS and INRMP Preparers

The lead agencies for preparing the EIS and the ROD include the U.S. Departments of the Air Force, Navy, and Interior; AGFD is a cooperating agency. The final INRMP, which will be based on the resource management alternative selected in the ROD, will be prepared jointly by the Departments of the Air Force, Navy, and Interior and AGFD. The agencies with responsibilities for the implementation of the MLWA of 1999 and preparation of the INRMP developed a Cooperative Agreement in 2001 to guide their collective efforts in these endeavors. The responsibilities of these agencies—under the MLWA of 1999, Sikes Act, Cooperative Agreement, and NEPA—for preparing the EIS and INRMP and implementing the INRMP are summarized in Table 1. At the local planning level for the INRMP, the Secretaries of the Navy and Air Force are represented by the commanding

TABLE 1
AGENCY RESPONSIBILITIES FOR PREPARING THE EIS AND FINAL INRMP AND IMPLEMENTING THE FINAL INRMP

Task	Referenced Authority/Agreement				
	MLWA of 1999	**Sikes Act**	**MLWA Implementation Cooperative Agreement[1]**	**NEPA**	**Proposed INRMP EIS and the Final INRMP**
EIS and INRMP Preparation	Secretaries of the Navy, Air Force, and Interior shall jointly prepare the INRMP[2]. INRMP shall be prepared and implemented in accordance with the Sikes Act and provisions of the MLWA.[3]	Secretaries of the Navy and Air Force shall prepare the INRMP in cooperation with the Secretary of the Interior, acting through the Director of USFWS, and the Director of AGFD.[4]	Departments of the Navy, Air Force, and Interior and the State of Arizona will jointly prepare and implement an ecosystem-based INRMP.[5]	A lead agency shall supervise the preparation of an EIS. Other federal, state, local, or tribal agencies with jurisdiction or special expertise with respect to any environmental issue maybe a cooperating agency upon the request of the lead agency in the preparation of an EIS.[6]	Departments of the Navy, Air Force, and Interior are the lead agencies and AGFD is a cooperating agency for preparing the EIS and the ROD, which will identify the alternative selected for the INRMP. These agencies will jointly prepare the final INRMP based on the resource management alternative selected in the ROD.
EIS and INRMP Decisionmaking	Disagreements on contents of the INRMP or its subsequent amendments shall be resolved by the Secretary of the Navy for BMGR–West and the Secretary of the Air Force for BMGR–East, after consultation with the Secretary of the Interior, acting through the Arizona State Director of BLM and Regional Director (Region 2) of USFWS.[7]	Secretaries of the Navy and Air Force are responsible for decision making, but the INRMP must also reflect the mutual agreement of the Director of USFWS and Director of AGFD concerning the conservation, protection, and management of wildlife resources.[8]	Disagreements on contents of the INRMP shall be resolved by the Secretary of the Air Force for BMGR–East and Secretary of the Navy for BMGR–West, after consultation with the Secretary of the Interior, acting through the Arizona State Director of BLM, Regional Director (Region 2) of USFWS, and Governor of Arizona, who may delegate to the Director of AGFD.[9]	The lead and cooperating agencies may support the same preferred alternative or identify separate preferred alternatives in the EIS. The lead agency(ies) signs the ROD selecting the preferred alternative. Cooperating agencies may provide a letter concurring with or objecting to that selection; or cooperating agencies with jurisdiction by law may prepare their own ROD selecting a different environmentally preferred alternative.[10]	Secretaries of the Navy, Air Force and Interior will sign the ROD for the EIS selecting the preferred resource management alternative for the INRMP. AGFD may concur with or object to that selection. Secretaries of the Navy, Air Force, and Interior and the Director of AGFD will sign the INRMP which must reflect their mutual agreement concerning the conservation, protection, and management of wildlife resources.
INRMP Review and Amendment	The INRMP shall include procedures to ensure that the periodic reviews of the plan under the Sikes Act are conducted jointly by the Secretaries of the Navy, Air Force, and Interior, and that affected States [Arizona], Indian tribes, and the public, are provided with a meaningful opportunity to comment upon any substantial revisions to the plan that may be proposed.[11]	The INRMP must be reviewed as to operation and effect by the Secretaries of the Navy and Air Force in cooperation with the Secretary of the Interior, acting through the Director of USFWS, and the Director of AGFD on a regular basis, but not less often than every five years.[12]	Cooperative Agreement parties will meet as needed to develop, review, and implement the INRMP.[13]	Proposed INRMP amendments will be reviewed under the NEPA as applicable pursuant to 40 CFR ß 1501.2, 1501.3, 1501.4, 1502.25, and 1508.18.	Section 1.4.4 of the EIS expresses the intent of the Marine Corps, Air Force, USFWS, and AGFD to review the INRMP, and amend it as necessary, at a minimum of five-year intervals, or as required.
INRMP Public Report Preparation	Concurrent with each review of the INRMP, the Secretaries of the Navy, Air Force, and Interior shall jointly prepare a public report describing changes in the conditions of the BMGR, including current military use of the range, changes in military use since the previous report, and efforts related to the management of natural and cultural resources and environmental remediation during the previous five years. Before the report is finalized, the Secretaries shall invite interested members of the public to review and comment on the report, and shall hold at least one public meeting concerning the report.[14]	Not applicable to Sikes Act requirements.	Cooperative Agreement parties will prepare and issue a report every five years describing changes in the condition of the lands withdrawn and reserved for the BMGR. The report shall include a summary of current and future military use, any changes in military use since the previous report, and efforts related to the management of natural and cultural resources and environmental remediation. Interested members of the public will be invited to review and comment on the report; at least one public meeting concerning the report will be held.[15] The Secretaries of the Air Force and Navy shall resolve any disagreements concerning the contents of the five-year reports.[16]	Not applicable to NEPA requirements.	Section 1.4.4 of the EIS expresses the intent of the Marine Corps, Air Force, USFWS, and AGFD to prepare and issue the public report specified in the MLWA of 1999 at five-year intervals.

1 Cooperative Agreement, dated January 2001, by and between the Departments of the Air Force, Navy, and Interior and the State of Arizona to implement MLWA of 1999 at the BMGR
2 P.L. 106-65 Section 3031(b)(3)(A)
3 P.L. 106-65 Section 3031(b)(3)(D)
4 16 U.S.C 670a (a)(2)
5 Cooperative Agreement Section V.1.
6 40 CFR ß1501.5, 1501.6, 1508.5, and 1508.16
7 P.L. 106-65 Section 3031(b)(3)(C)
8 16 U.S.C. 670a (a)(2)
9 Cooperative Agreement Section VII.1.
10 40 Questions & Answers About CEQ Regulations (14b)
11 P.L. 106-65 Section 3031(b)(3)(E)(ix)
12 16 U.S.C. 670a (b)(2)
13 Cooperative Agreement Section V.1.e
14 P.L. 106-65 Section 3031(b)(5)
15 Cooperative Agreement Section V.1.b
16 Cooperative Agreement Section VII.2.



Managing and protecting cultural resources on the range is a challenge, particularly in areas that may be subject to military, public or other surface users.

officers of Marine Corps Air Station (MCAS) Yuma and Luke Air Force Base (AFB), the local commands to which responsibility for BMGR—West and BMGR—East has been delegated. The Secretary of the Interior is represented locally by the USFWS and Cabeza Prieta NWR, The BLM Phoenix Field Office is also participating. AGFD is represented by the Director's Office and the Region IV Office in Yuma. An INRMP Core Planning Team composed of representatives from MCAS Yuma, Luke AFB, Cabeza Prieta NWR, BLM Phoenix Field Office, and AGFD was established to guide and coordinate preparation of the EIS and the INRMP.

Relationship of the INRMP to the ICRMP

The MLWA of 1999 directs that the INRMP for the BMGR be prepared and implemented in accordance with the Sikes Act[14] and include provisions for the proper management and protection of both cultural and natural resources.[15] The provision to manage both natural and cultural resources in the INRMP is an approach that is not fully incorporated within Sikes Act guidance. The scope of the Sikes Act is limited to the conservation and management of natural resources on DoD lands and does not include guidance for the management and protection of cultural resources. More than 30 individual federal laws, federal regulations, executive orders and memoranda, federal guidelines, and military requirements provide authority and guidance for cultural resources management on DoD lands. In view of these legal instruments, DoD has implemented policies that direct the preparation of ICRMPs for all lands and waters under its control that contain cultural resources.[16] ICRMPs are often prepared separately from INRMPs but these plans can be combined. Generally; however, DoD has adopted a dual planning and management track for natural and cultural resources under its jurisdiction. As a result, INRMPs and ICRMPs serve as companion documents that direct natural and cultural resources management at DoD installations.

Preparation of an ICRMP for the BMGR was under way before the MLWA of 1999 directed that the INRMP must include provisions for both natural and cultural resources management. The Air Force and Marine Corps took two steps to meet their cultural resources management responsibilities. First, they decided to complete their joint effort to prepare an ICRMP for the range. Second, they determined that the proposed INRMP would adopt and support the cultural resources management goals of the ICRMP and would incorporate the protocols and procedures prescribed in the ICRMP for managing culture resources by reference. At the time of this Community Report, the ICRMP is pending final adoption by the Air Force and Marine Corps. However, final cultural resources management goals for the BMGR have been developed and will be incorporated in the proposed INRMP (Table 2).

Table 2
Cultural Resources Management Goals [Preliminary] to be Adopted from the ICRMP

1	Conflicts between resource protection and [military] mission needs are minimized.
2	Cultural resources are routinely considered by cooperating agencies as a part of project planning and design, for all activities on BMGR.
3	Cultural resources on BMGR are preserved in place to the fullest extent possible.
4	Cultural resources on BMGR are identified, and evaluated (as consistent with Air Force and Marine Corps guidance) for the National Register of Historic Places.
5	Input from Native American tribes and groups that attach cultural significance to places on BMGR will be encouraged to the fullest extent possible.
6	Native American concerns for heritage resources (both natural and cultural) are identified and addressed, and Native Americans have access to heritage resources to the maximum degree consistent with Air Force/Marine Corps mission requirements.
7	Research involving places on or materials and information collected from BMGR is of the highest professional quality.
8	Native Americans, archaeologists, and the general public benefit from and have access to information about cultural resources on BMGR to the extent consistent with Air Force and Marine Corps responsibilities for resource protection and public education and outreach.

The natural resources management goals developed for the proposed INRMP are compatible with these cultural resources management goals and also with the alternative management strategies studied in the draft EIS that would implement those natural resources management goals.

Natural and Cultural Resources Management Responsibilities at the BMGR

As a result of the MLWA of 1999 and other enabling legal instruments, three federal agencies and one state agency—Air Force, Marine Corps, USFWS, and AGFD—currently hold primary responsibilities for managing natural resources within the BMGR. The Air Force and Marine Corps also have the primary responsibilities for the management of cultural resources within the range. A fifth agency, BLM, has reserve oversight roles but no longer has direct resource management responsibilities.

Air Force and Marine Corps Responsibilities

Primary surface management responsibility for BMGR lands, and hence natural and cultural resources, previously had been assigned to the Secretary of the Interior, who acted locally through BLM, under the prior Congressional authorization for the BMGR, the MLWA of 1986.[17] The MLWA of 1999 transferred jurisdiction over and interests in these lands from the Secretary of the Interior to the Secretaries of the Air Force and Navy for BMGR—East and BMGR—West, respectively, on 6 November 2001.[18] Thus, the Air Force and Marine Corps are now responsible for using the range to support certain national defense purposes while simultaneously providing for the proper management and protection of its natural and cultural resources.[19]

Secretary of the Interior Responsibilities

The Secretary of the Interior retains a certain level of involvement in the management of natural, and to a lesser extent cultural, resources within the BMGR. The MLWA of 1999[20] directs the Secretaries of the Navy, Air Force, and Interior to jointly prepare the INRMP. The Sikes Act[21] clarifies that the Secretary of the Interior will act through the Director of the USFWS when participating in the preparation and implementation of INRMPs (see Table 1). Further, USFWS responsibilities for administering compliance with the Endangered Species Act (ESA) of 1973[22] and Migratory Bird Treaty Act (MBTA) of 1918[23] within the BMGR are neither diminished nor expanded by the MLWA of 1999 or Sikes Act.

Air Force personnel have conducted numerous natural and cultural resource surveys over the last six years.

The BLM's participation in the development of the INRMP is advantageous as the Phoenix and Yuma field offices served as the primary surface managers for BMGR—East and BMGR—West prior to the November 2001 transfer of this responsibility to the Secretaries of the Air Force and Navy. This tenure represents the most recent 15 years of primary land management experience with the range. The BLM will also continue to have certain responsibilities relative to the BMGR under the MLWA of 1999 including:

Marine Corps range wardens provide law enforcement and visitor assistance services within BMGR—West.

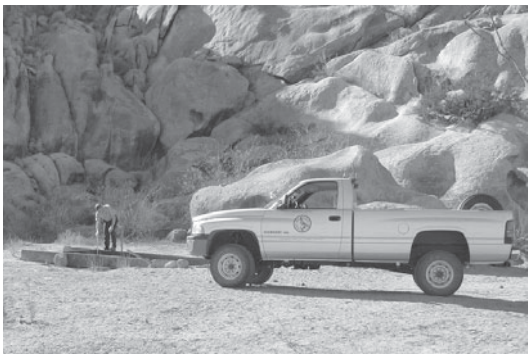
The Secretary of the Interior is represented locally in BMGR resource management issues by USFWS personnel from the adjacent Cabeza Prieta NWR.

(1) consulting in the resolution of disagreements on the contents of the INRMP or its subsequent amendments, (2) resuming management of BMGR lands should resource management authority be returned to the Secretary of the Interior, and (3) consulting on any non-emergency closures of the BMGR that are not specified in the forthcoming INRMP.[24] The dispute resolution responsibility of the Secretary of the Interior is limited to consultation.

The BLM would only resume management of the BMGR if the Secretary of the Interior determines that the Air Force and Marine Corps have failed to manage the withdrawn lands in accordance with the INRMP, such failure is resulting in significant and verifiable degradation of natural and cultural resources, and the Secretaries of the Air Force and Navy fail to correct the management deficiencies.[25]

AGFD Responsibilities

The State of Arizona has primary jurisdiction over resident wildlife management within the BMGR, except where pre-empted by federal law. This jurisdiction is implemented on behalf of the state by the AGFD, which acts under the guidance of the Arizona Game and Fish Commission. Nothing in the MLWA of 1999 or Sikes Act either diminishes or expands the jurisdiction of the state with respect to resident wildlife management. In addition, AGFD is responsible for providing safe off-highway vehicle recreation for Arizona.



AGFD Wildlife Manager performs a routine inspection of a developed wildlife water within BMGR—West.

The Sikes Act recognizes state jurisdiction for resident wildlife by stipulating that each INRMP is to be prepared in cooperation with the head of the state fish and wildlife agency in the state in which the installation is located (AGFD in Arizona). In addition, each INRMP must reflect the mutual agreement of all parties—Secretary(ies) of the involved military department(s), Secretary of the Interior, and head of the state fish and wildlife agency—concerning the conservation, protection, and management of wildlife resources (see Table 1). The role of the State of Arizona for resolving any disputes about the content of the INRMP is also supported by the Cooperative Agreement for the implementation of the MLWA of 1999 (see Table 1).

Range-wide Scope of the INRMP

The MLWA of 1999 provides that a single INRMP may be prepared that addresses natural and cultural resources management for the entire range or may be prepared as two individual INRMPs that address the management of BMGR—East and BMGR—West separately.[26] The Secretaries of the Air Force, Navy, and Interior, in cooperation with AGFD, have determined that effective management of the range will be best served by a single INRMP that is applicable to the entire range. Joint preparation of the INRMP by the Air Force, Marine Corps, BLM, USFWS, and AGFD expresses the commitment of these agencies not to fragment management of the BMGR ecosystem. The forthcoming INRMP will be applicable to the entire BMGR. The Secretaries of the Air Force and Navy are ultimately accountable for the implementation of the INRMP, including the assumption of all implementation costs; however, the mutual intent of the agencies participating in the preparation of the EIS is to support development and implementation of the forthcoming INRMP through continuing cooperative efforts that are facilitated by ongoing public involvement programs.

Interagency Collaboration and Intergovernmental Consultation

MLWA Implementation Cooperative Agreement and Core Planning Team

The MLWA of 1999 provides that the Secretaries of the Air Force and Navy may enter into Memorandums of Understanding (MOUs) or Cooperative Agreements with the Secretary of the Interior or other appropriate federal, state, or local agencies, Indian tribes, or other public or private organizations or institutions to facilitate implementation of the INRMP should they find that such agreements would be favorable for managing the BMGR.[27] In accordance with this provision, the U.S. Departments of the Air Force, Navy, and Interior and the State of Arizona signed a Cooperative Agreement that went into effect in January 2001 to facilitate joint preparation and implementation of an ecosystem-based INRMP for the BMGR (see Table 1). This agreement neither adds to nor detracts from the individual agency responsibilities and authorities that have been assigned by the MLWA of 1999, Sikes Act, or other applicable laws. Rather, the purpose of this agreement is to provide a framework for the Air Force, Navy (Marine Corps), Department of the Interior, and State of Arizona to work cooperatively in the implementation of the provisions of the MLWA of 1999. The INRMP Core Planning Team was established in accordance with the Cooperative Agreement to guide and coordinate preparation of the EIS for the development of the BMGR INRMP and the final INRMP document.

Barry M. Goldwater Range Executive Council

In addition to the Cooperative Agreement, a previously existing MOU that established the Barry M. Goldwater Range Executive Council (BEC) was amended in February 2001 for the purpose of "...providing a forum for collaboration by the statutory decisionmakers in the management of resources and their uses..." within the BMGR. The BEC was first formed in 1997 by the Air Force, Marine Corps, BLM, USFWS, and AGFD at the local management level as an informal ad hoc committee designed to facilitate better collaborative management of BMGR resources. The BEC was formally established in March 1998 through an MOU among the member agencies. The membership of the BEC was expanded, through the amended February 2001 MOU, to include the U.S. Border Patrol and National Park Service (NPS) in addition to the original five members. The council membership consists of the senior functional manager of each agency's local unit(s). No single agency serves as the council lead. Rather, the organization operates to exchange information and provide consensus recommendations to the agencies with primary responsibility for the particular needed action. These recommendations are intended to integrate long-term management plans across jurisdictional and administrative boundaries.

Intergovernmental Executive Committee

The MLWA of 1999 specifically directs the Secretaries of the Navy, Air Force, and Interior to establish an intergovernmental executive committee (IEC), which occurred in December 2001, to provide a forum solely for the purpose of exchanging views, information, and advice relating to the management of the natural and cultural resources within the BMGR.[28] In accordance with the terms of the enabling MOU, membership in the IEC is limited to those agencies (federal, state, and local) and Native American tribes that may have a direct responsibility for, potential impact upon, or direct interest in the lands or resources of the BMGR. The membership is composed of selected representatives from interested federal agencies, as well as at least one elected officer (or other authorized representatives) from state government and from each local and tribal government as designated at the discretion of the Secretaries of the Navy, Air Force, and Interior. IEC meetings, which occur at least once every four months, are open to the public and provide non-IEC participants with periodic opportunities to present opinions regarding BMGR management policies and procedures to the IEC for discussion and possible action recommendations. The IEC meetings replaced the BMGR Partners meetings that previously served as a regularly scheduled forum for inter-governmental information exchange and ongoing public involvement pertaining to the management of natural and cultural resources within the BMGR.

Military personnel and members of the public had the chance to discuss BMGR management issues at the EIS/INRMP scoping meetings and workshops.

Public Outreach, Information, and Participation Programs

Program Overview

A Notice of Intent (NOI) to prepare the draft EIS for the proposed BMGR INRMP was published in the *Federal Register* on 21 July 2000. Publication of the NOI initiated a program for involving the public, Native American tribes, and various levels and agencies of government in the development of the draft EIS and proposed INRMP. By the date of this Community Report, this program had included (1) six public scoping meetings and an associated 30-day written comment period; (2) two workshops scheduled to support direct public, Native American, and government participation in the planning process; and (3) consultations with Native American tribes. In addition to the NOI, the public notice and information program has included news releases to newspapers, magazines, and radio and television stations; newspaper display advertisements announcing the public scoping meetings; and four newsletters sent to more than 500 individuals who have expressed interest in the planning process.

Public Scoping Meetings

Public scoping meetings were held in the Arizona communities of Glendale, Tucson, Yuma, Gila Bend, Ajo, and Sells during August 2000. Materials presented for public comment at these meetings included draft resource management goals for the proposed INRMP. A total of 125 individuals attended the meetings with 32 percent of participants indicating that they were affiliated with one of 29 different organizations or Native American Tribes. In all, 74 persons provided comments. Most participants offered several comments and a total of 381 individual comments were submitted. As comments were received, they were classified into 36 issue categories. About two-thirds of all the comments submitted during the scoping period concerned just 9 of the 36 issue categories (Figure 2).

About one-third of the 381 individual comments regarded motorized vehicle use and access. Since the late 1980s, the use and management of the BMGR road network has been an ongoing management issue at the range. Concerns about wildlife management, recreation and public access permits, archaeology, and threatened and endangered species were among the other issues frequently expressed by the public.

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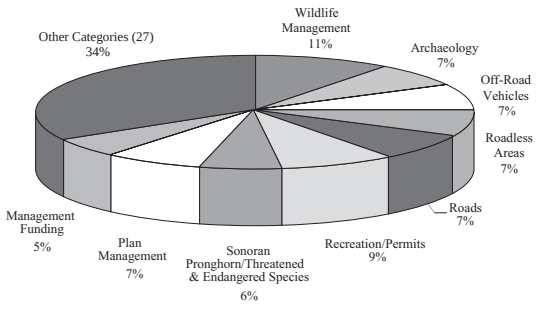
Public Workshops

After the close of the EIS scoping period, two one-day workshops were held at the Gila Bend Air Force Auxiliary Field (AFAF). These workshops provided considerable opportunities for public attendees and the INRMP Core Planning Team to discuss key issues that are central to the development of the proposed INRMP.

The first workshop, held in November 2000 and attended by 23 members of the public, focused on a final public review of the INRMP resource management goals and an initial detailed public discussion of draft alternative management strategies for the INRMP. The resource management goals were finalized as an outcome of this workshop and the alternative management strategies were revised and prepared for further public review at the second workshop.

The second workshop, held in January 2001 and attended by 39 members of the public, was focused on two tasks. First, the revised alternative management strategies were presented and critiqued through an open discussion. The alternative management strategies that appear in the draft EIS incorporate public input received during this workshop.

Figure 2
Public Scoping Comments by Issue Category Affiliation



The second task of the January workshop was to conduct an interactive exercise with the public attendees concerning their interests in public road access within the BMGR and the implications of roads for resource protection, conservation, and rehabilitation. Large-scale maps were used to present four draft alternative strategies developed by the Core Planning Team for managing the road network within the range. All four strategies were based on the existing range road network but varied in terms of the extent of the network that would be retained for public and agency use or closed to enhance resource protection, conservation, or rehabilitation. At one end of the spectrum was a strategy representing the minimum road network needed to support the ongoing military, resource management, and law enforcement missions on the range. This strategy would provide the least amount of public road access within the BMGR. At the other end of the spectrum was a strategy that would retain the entire existing road network and allow for some additional short road segments. This network would exceed current agency access needs but would also provide the greatest degree of vehicle travel opportunities to the public. The public attendees reviewed the four alternative strategies, provided recommendations on how the strategies might be revised to provide better balance between public access needs and other resource management requirements, and voiced their support for or opposition to one or more of the strategies. The consensus among the attendees was that the four road network strategies generally represented the full range of aggregate public concerns about access and resource protection. The Core Planning Team refined the four road network strategies after reviewing both public input and their own agency needs for vehicular access. These four road network management strategies are presented as alternatives in the draft EIS.

Native American Consultations

Consultations with Native American tribes included contacts with potentially interested tribes and groups in Arizona, California, and New Mexico with a stated interest in the BMGR. Contacts included (1) a letter inviting tribal leaders to participate in the INRMP development process as the project began; (2) newsletters; (3) a scoping meeting in Sells, Arizona on the Tohono O'odham Nation; (4) invitations to the public workshops; and (5) a letter requesting input on tribal concerns, particularly regarding resource management and access to places of cultural importance. Some of the comments received in response to these inquiries included the following:

- Continue efforts to preserve and protect cultural resources and, in particular, continue to involve tribes in the cultural resource aspects of the plan.
- Prohibit off-road vehicular travel, particularly because such activity damages resources.
- Ensure DoD maintains adequate cultural and biological staffing to address the complexity of the BMGR and the associated management issues.
- Control recreational access to protect natural and cultural resources.
- Coordinate with and involve tribes in range management activities.

Military aircrews from all branches of the U.S. Armed Forces flying all types of aircraft rely on the BMGR to hone their air combat skills.

Military Use of the BMGR

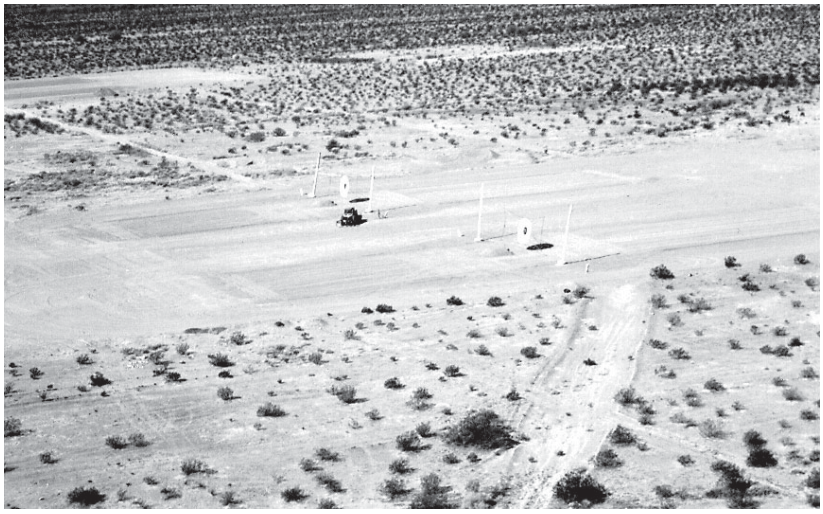
Military Users of the BMGR

The BMGR is made available for military purposes by virtue of the MLWA of 1999 for use as (1) an armament and high-hazard testing area; (2) training for aerial gunnery, rocketry, electronic warfare, and tactical maneuvering and air support; and (3) other defense-related purposes. The current primary mission of both BMGR—East and BMGR—West is military aircrew training, including advanced training for student aircrews transitioning to frontline combat aircraft and readiness training for aircrews in operational combat units. The range serves the Air Force, Marine Corps, Air Force Reserve

Command (AFRC), Air National Guard (ANG), Navy, and Army National Guard (ARNG) in this capacity. As a secondary mission, the range has also been used periodically for testing and some other defense-related purposes. The primacy of the aircrew-training mission at the BMGR is expected to continue into the foreseeable future. Regular military users of the range typically originate from the BMGR region and include users from Luke AFB, MCAS Yuma, Davis-Monthan AFB, ANG Base in Tucson, Silverbell Army Heliport in Marana, and MCAS Miramar. In addition to regular users, "casual user" training deployments that originate from active duty, reserve, and ANG flying units from other areas of the country and from U.S. and allied units from overseas also train at the range.

Although the BMGR is technically a withdrawn land area, from the perspective of supporting military operations, the range is composed of both lands and overlying restricted airspace reserved for military purposes (Figures 3 and 4). The four restricted airspace areas overlying the range—R-2301E, R-2301W, R-2304, and R-2305—are designated by the Federal Aviation Administration (FAA) to support the military training missions of the range. BMGR—East and BMGR—West currently support a wide diversity of tactical aviation training activities as well as selected ground training and training support operations. To support these activities and operations, BMGR—East and BMGR—West land and restricted airspace areas are partitioned into a number of smaller subranges or operations areas in order to provide locations where multiple simultaneous training or other operations can be effectively and safely supported.

Strafe targets on a BMGR manned range are prepared by maintenance crews for the next round of training.



BMGR—East Land Use and Operations

Air Force Instruction (AFI) 13-212, Volume 1, Luke AFB Supplement 1 provides official information and mandatory procedures for all units and users (military or civilian) operating in BMGR—East. This AFI includes procedures governing all surface access to BMGR—East. In accordance with this AFI, the BMGR—East land area is currently subdivided to support nine aviation subranges, one Air Force auxiliary airfield, two outlying auxiliary airfields, one Explosive Ordnance Disposal (EOD) training range, one small arms range, and four range munitions consolidation points (RMCPs) (see Figure 3). The nine BMGR—East subranges include eight aircraft weapons ranges and an electronically instrumented air combat tactics (ACT) range. The eight aircraft weapons ranges include an air-to-air firing range for training in air-to-air gunnery or missile firing and seven subranges for air-to-ground weapons delivery training. Manned Ranges 1, 2, 3, and 4 and North, South, and East Tactical (TAC) ranges constitute the air-to-ground weapons ranges. The instrumented ACT range is the Goldwater Range Measurement and Debriefing System (GRMDS). Gila Bend AFAF is the Air Force auxiliary airfield and the two outlying auxiliary airfields include Auxiliary Airfield 6 (AUX-6) and Stoval Auxiliary Airfield.

The ACT Range and eight aircraft weapons ranges are the principal training support features of BMGR—East. The airspace assigned to these nine subranges can be reallocated to support non-routine activities but the lateral airspace boundaries shown on Figure 3 are typically in effect. The airspace assigned to the ACT Range typically extends to the perimeter of R-2301E but does not include the airspace below 25,000 feet above mean sea level (feet MSL) overlying Manned Ranges 1, 2, and 4 and North and South TAC ranges. The Air-to-air Firing Range is excluded from the ACT Range when the firing range is active. Airspace typically assigned to the manned, tactical, or air-to-air firing ranges can be incorporated in the ACT Range when these other ranges are inactive. The ACT also can be expanded to incorporate all of R-2304 and R-2305 and/or airspace within the Sells Military Operations Area, another type of FAA-designated military special use airspace, which overlies Tohono O'odham Nation to the east of the BMGR. The surface facilities of the ACT

Although now used infrequently, the Air-to-Air Firing Range supports live fire training with aircraft cannons or air-to-air missiles. The smoke trailing behind this F-16 is generated by its 20 mm cannon as it fires.

Range include 17 ground-based electronic instrument sites that constitute the GRMDS. Nine of these instruments sites are located within BMGR—East; the remaining sites are in off-range locations. Fifteen of these instrument sites are tracking and instrumentation subsystem (TIS) stations that require a land area of no more that 15 feet by 15 feet.

The airspace designated for the Air-to-air Firing Range overlies a land area of about 101,000 acres (158 square miles–Table 3). This land serves as a fallout area for munitions expended in the overlying firing range (see Figure 3). Current munitions use is limited to 20-millimeter (mm) training practice cannon rounds fired in air-to-air gunnery at an Aerial Gunnery Target System (AGTS) tow target. Expended rounds impact within the underlying munitions fallout

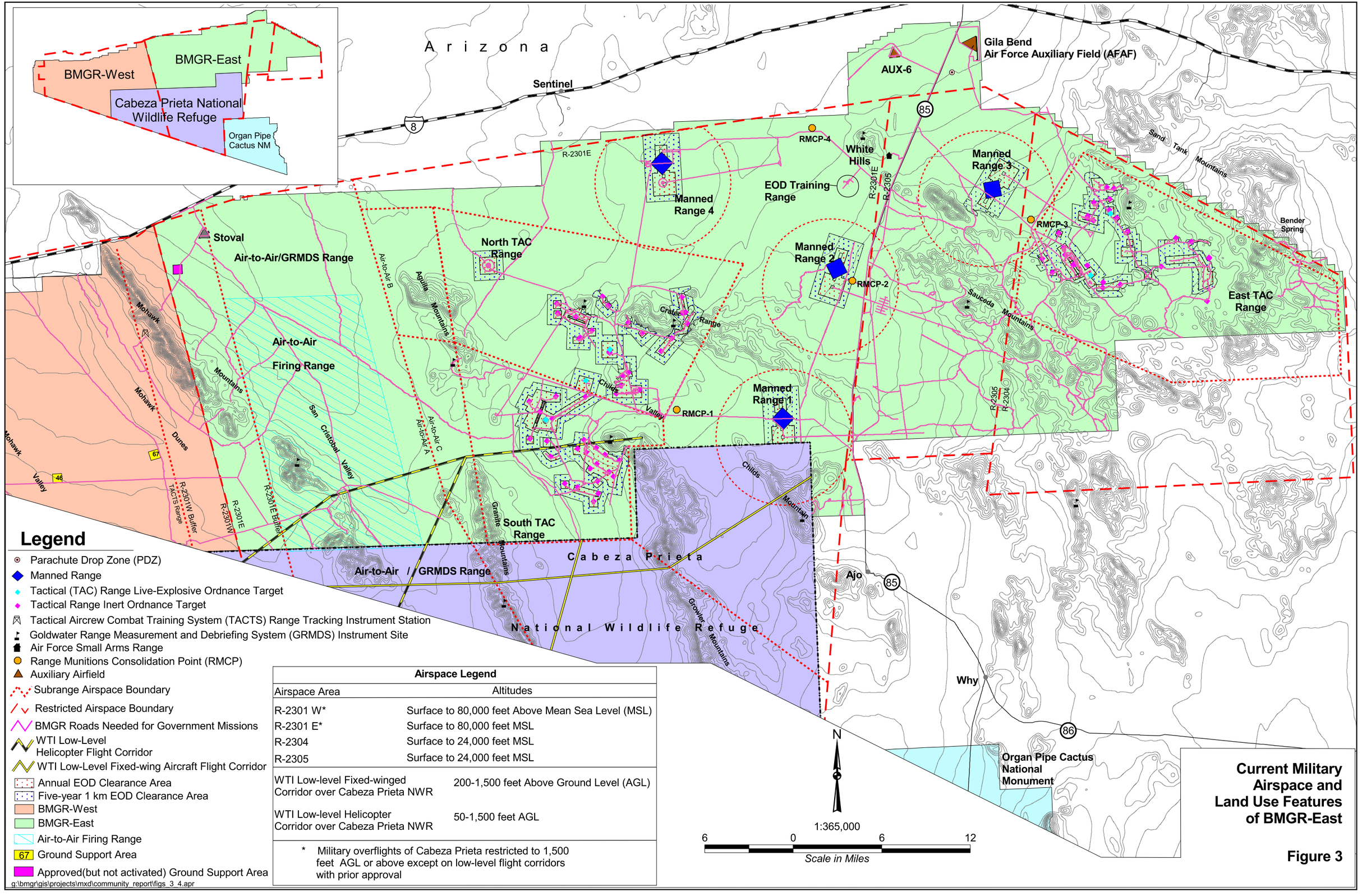
TABLE 3
ACTIVE AND INACTIVE MILITARY SURFACE USE FOOTPRINT WITHIN THE BMGR

Line	Military Surface Use Area (Acres Included)	Associated Surface Disturbance	Total Acres	Percentage of BMGR Affected*
1	Primary air-to-air gunnery range (101,040)	Use causes or has caused negligible levels of disturbance to soil surface or vegetation community across affected area	101,040	5.8
2	Manned range active (1 km) five-year EOD clearance areas (19,070)	Use causes or has caused low to moderate levels of disturbance to soil surface or vegetation community across affected area	119,786	6.9
3	Tactical range active (1 km) five-year EOD clearance area (42,028)			
4	Additional retired manned range (1 nm) five-year EOD clearance areas (8,168)			
5	Additional retired tactical range (1 nm) five-year EOD clearance areas (50,520)			
6	Manned range annual EOD clearance area (7,615)	Use causes or has caused low to high levels of disturbance to soil surface or vegetation community across affected area	47,367**	2.7
7	HE hill dispersed munitions blast area (2,976)			
8	Tactical range inert target munitions impact area (17,154)			
9	Tactical range annual EOD clearance area (26,447)			
10	AUX-6 (334)			
11	Stoval Auxiliary Airfield (334)			
12	AUX-2 (215)			
13	Five closed auxiliary airfields (1,500)			
14	Ground troop deployment support areas (10,922)			
15	Gila Bend AFAF (2,007)	Use causes moderate to high levels of disturbance to soil surface or vegetation community across affected area	2,750	0.16
16	Manned range 50-use day EOD clearance area (308)			
17	Range maintenance, cleanup, and EOD support areas (435)			
18	Manned range cleared layout and targets (939)	Use causes or has caused high to complete levels of disturbance to soil surface or vegetation community across affected area	2,841	0.16
19	Tactical range cleared-target simulations (430)			
20	HE hill target core munitions blast areas (51)			
21	Developed training sites (180)			
22	Moving Sands/Cactus West cleared target areas (400)			
23	Retired test areas (841)			
24	**Total Active and Inactive Military Surface Use Acres (Sum of lines 1-6 and 9-23)**		**273,784**	**15.8**
25	**Total Active Military Surface Use Acres (Sum of lines 1-3, 6, 9-12, and 14-22)**		**212,755**	**12.3**
26	**Total Inactive Military Surface Use Acres (Sum of lines 4, 5, 13, and 23)**		**61,029**	**3.5**

* Percentages for each line are calculated as line area divided by 1,733,921 acres, the area of the BMGR as delineated by the MLWA of 1999. Total percentages are rounded to the nearest 0.1 percent.

** This total does not include the acreages within the HE Hill dispersed munitions blast area (Line 7) or the tactical range inert target munitions impact areas (Line 8) because these areas lie almost entirely within the tactical range annual EOD sweep area (Line 9).

km = kilometer
nm = nautical mile
HE = high explosive



Legend

- Parachute Drop Zone (PDZ)
- Manned Range
- Tactical (TAC) Range Live-Explosive Ordnance Target
- Tactical Range Inert Ordnance Target
- Tactical Aircrew Combat Training System (TACTS) Range Tracking Instrument Station
- Goldwater Range Measurement and Debriefing System (GRMDS) Instrument Site
- Air Force Small Arms Range
- Range Munitions Consolidation Point (RMCP)
- Auxiliary Airfield
- Subrange Airspace Boundary
- Restricted Airspace Boundary
- BMGR Roads Needed for Government Missions
- WTI Low-Level Helicopter Flight Corridor
- WTI Low-Level Fixed-wing Aircraft Flight Corridor
- Annual EOD Clearance Area
- Five-year 1 km EOD Clearance Area
- BMGR-West
- BMGR-East
- Air-to-Air Firing Range
- 67 Ground Support Area
- Approved(but not activated) Ground Support Area

Airspace Legend

Airspace Area	Altitudes
R-2301 W*	Surface to 80,000 feet Above Mean Sea Level (MSL)
R-2301 E*	Surface to 80,000 feet MSL
R-2304	Surface to 24,000 feet MSL
R-2305	Surface to 24,000 feet MSL
WTI Low-level Fixed-winged Corridor over Cabeza Prieta NWR	200-1,500 feet Above Ground Level (AGL)
WTI Low-level Helicopter Corridor over Cabeza Prieta NWR	50-1,500 feet AGL

* Military overflights of Cabeza Prieta restricted to 1,500 feet AGL or above except on low-level flight corridors with prior approval

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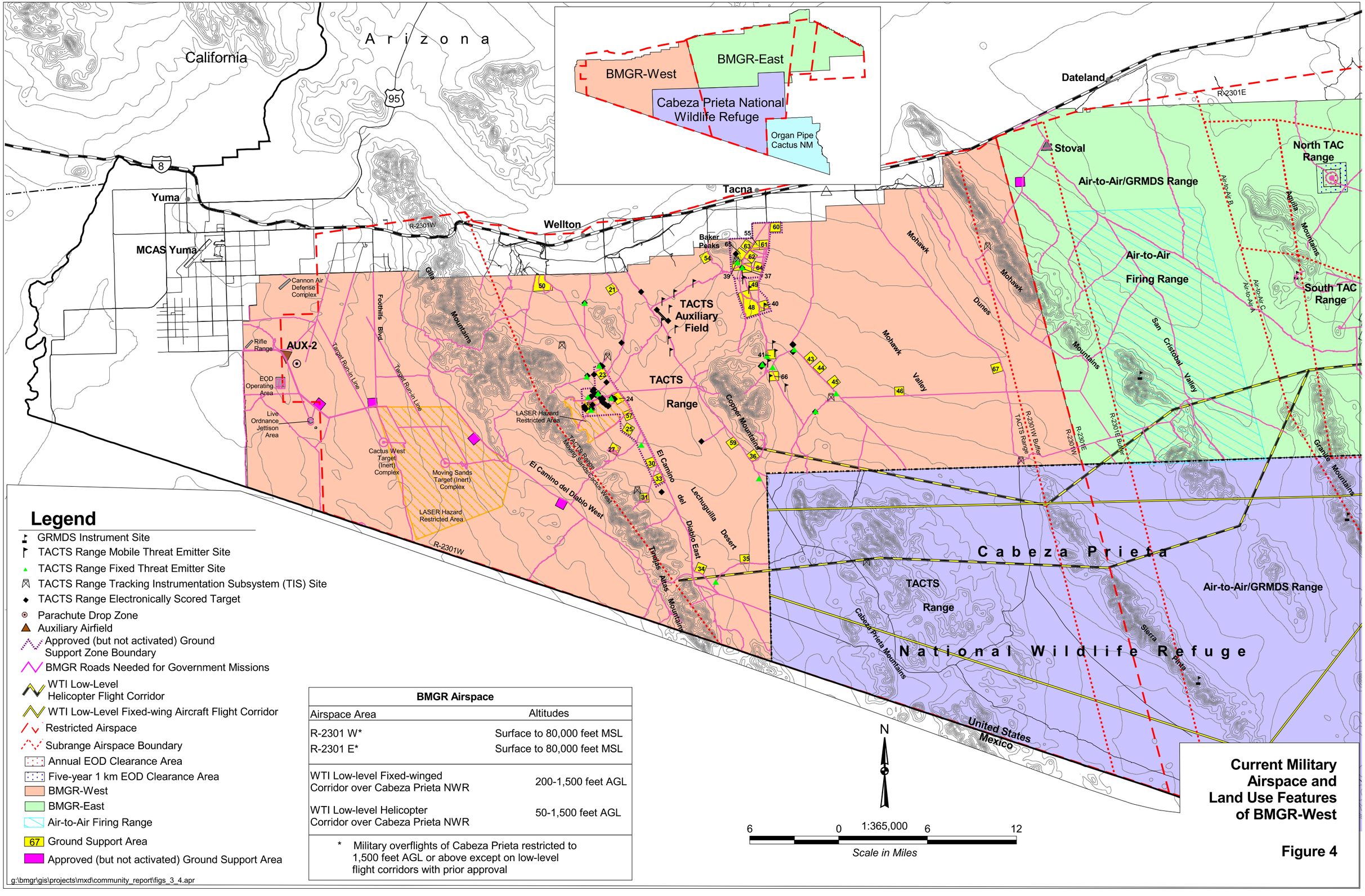
Current Military Airspace and Land Use Features of BMGR-East

Figure 3



Legend

- GRMDS Instrument Site
- TACTS Range Mobile Threat Emitter Site
- TACTS Range Fixed Threat Emitter Site
- TACTS Range Tracking Instrumentation Subsystem (TIS) Site
- TACTS Range Electronically Scored Target
- Parachute Drop Zone
- Auxiliary Airfield
- Approved (but not activated) Ground Support Zone Boundary
- BMGR Roads Needed for Government Missions
- WTI Low-Level Helicopter Flight Corridor
- WTI Low-Level Fixed-wing Aircraft Flight Corridor
- Restricted Airspace
- Subrange Airspace Boundary
- Annual EOD Clearance Area
- Five-year 1 km EOD Clearance Area
- BMGR-West
- BMGR-East
- Air-to-Air Firing Range
- 67 Ground Support Area
- Approved (but not activated) Ground Support Area

BMGR Airspace

Airspace Area	Altitudes
R-2301 W*	Surface to 80,000 feet MSL
R-2301 E*	Surface to 80,000 feet MSL
WTI Low-level Fixed-winged Corridor over Cabeza Prieta NWR	200-1,500 feet AGL
WTI Low-level Helicopter Corridor over Cabeza Prieta NWR	50-1,500 feet AGL

* Military overflights of Cabeza Prieta restricted to 1,500 feet AGL or above except on low-level flight corridors with prior approval

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Current Military Airspace and Land Use Features of BMGR-West

Figure 4

area. Although unusual, the AGTS may also fall into this area if the target tow cable is severed from the tow aircraft or the AGTS must be jettisoned because of gunnery damage. Thousands of expended Deployable Aerial Rigged Targets (DARTs) were previously used as aerial tow targets and are scattered throughout and beyond the land area underlying the current Air-to-air Firing Range. The 14-foot-long DARTs were designed to simulate an aircraft target.

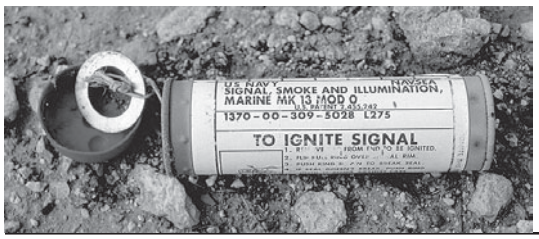
Air-to-air missile and rocket firings were a regularly scheduled past training activity within the Air-to-air Firing Range. Expended missiles ultimately impacted within the firing range fallout area or its vicinity. Some missile warheads failed to detonate during these training exercises and some missile or rocket motors failed to ignite or burn completely. As a result, missile and missile/rocket motors and warheads are likely present as unexploded ordnance (UXO) on the ground surface below the Air-to-air Firing Range and adjacent areas that were previously part of the air-to-air firing area. The concentration of UXO has not been quantified within these areas, but the likely presence of UXO represents a hazard for potential land surface users. Although expended munitions and target debris has collected within the range fallout area, there has been minimal disturbance to soils and vegetative communities within the surface footprint (see Table 3).

Compared to tactical and air-to-air ranges, manned ranges are relatively compact weapons ranges that are used to provide primary instruction in air-to-ground delivery of bombs, rockets, and gunnery (see Figure 3). A range control officer is present on the ground at each active manned range to control the movement of aircraft within the designated range airspace and the delivery of air-to-ground munitions on specified targets. The standard configuration of each manned range includes bull's-eye and simulated tactical targets. Aircrews learn and practice air-to-ground attack at these ranges by flying many repetitions of bomb, rocket, missile, and gunnery delivery profiles. Only inert practice munitions may be used on manned ranges. Annual EOD clearances to control surface build-up of expended munitions within Manned Ranges 1, 2, 3, and 4 cause moderate to high levels of disturbance to soil surfaces and vegetation communities across a total of 7,615 acres of land. The ranges are also subject to five-year EOD clearances, which are less intensive activities and cause low to moderate levels of soil surface and plant community disturbance to an additional 19,070 acres for all four ranges combined (see Table 3). About 1,900 acres of annual EOD clearances and almost 4,800 acres of five-year EOD clearances occur on the average at each manned range. In aggregate, this amounts to about 10.5 square miles of EOD clearance area at each manned range. In contrast, the restricted land and airspace buffer area around each active manned range that is typically required to maintain safe flying and munitions delivery conditions is 4.6 miles in radius and about 66 square miles in area.

Tactical ranges are used to train aircrews to use the munitions delivery skills developed on manned ranges in an environment that more realistically simulates air-ground battle conditions. Consequently, each tactical range occupies a large area. North, South, and East TAC ranges encompass 183, 123, and 177 square miles of BMGR—East, respectively. Each tactical range has dispersed arrays of several hundred realistic individual target simulations that represent tactical features such as airfields, railroad yards, missile emplacements, truck convoys, and armored vehicle formations (see Figure 3). With the exception of three HE Hill[29] targets (one in each tactical range) and two live Maverick[30] air-to-ground (missile) targets (one each in North and East TAC ranges), the targets within the tactical ranges are restricted to training with inert practice munitions. Although live (exploding) war fighting munitions are delivered on the HE Hill and Maverick targets, more than 99 percent of the individual air-to-ground bombs, rockets, and missiles used for training within BMGR—East are inert practice munitions. The annual and five-year EOD clearance areas within the three tactical ranges combined currently encompass aggregates of 26,447 acres (41 square miles) and 42,028 acres (66 square miles), respectively (see Table 3).

The Air-to-air Firing Range, four manned ranges, and three TAC ranges are configured

Many types of UXO may be encountered on the BMGR. All of them are potentially dangerous; none of them should be disturbed in any way.



within BMGR—East to support simultaneous training operations within all eight weapons ranges. Each range is of a size and shape designed to contain the weapons training activities it is designated to support. In addition, each of the eight ranges is positioned so that its flight operations can occur safely without interfering with the flexibility afforded to flight operations in the other ranges. The spacing of these weapons ranges leaves 923 square miles of between-range and perimeter lands within BMGR—East that support the Gila Bend AFAF, AUX-6, Stoval Auxiliary Airfield, Air Force Small Arms Range, four RMCPs, and EOD Training Range (see Figure 3). In addition to these developed facilities, which occupy only small portions of the total inter-range and perimeter areas (approximately 3,100 acres or 4.9 square miles in aggregate—see Table 3), these lands are managed to provide surface access control and open-space safety buffers between and adjacent to the weapons ranges and other military operating areas of BMGR—East.

BMGR—West Land Use and Operations

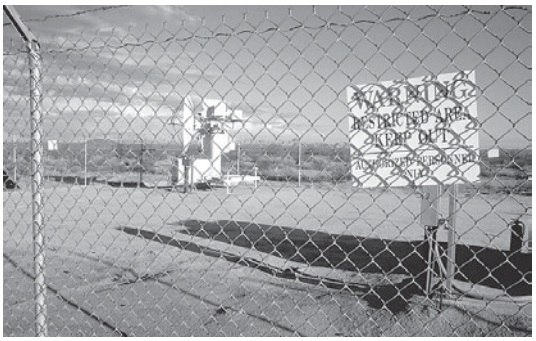
MCAS Yuma Station Order 3710.6H controls the use and operation of BMGR—West. The BMGR—West land area is currently partitioned into four aviation subranges, 39 undeveloped ground support areas, an outlying auxiliary airfield (AUX-2), a developed training site (Cannon Air Defense Complex), a rifle range, a parachute cargo drop zone, an EOD operating area, and a live ordnance jettison area (see Figure 4). The four aviation subranges include the AUX-2 operating area, Moving Sands and Cactus West target complexes, and tactical aircrew combat training system (TACTS) range.

The AUX-2 operating area and Moving Sands and Cactus West target complexes combined cover an area of about 248 square miles located to the west of the Gila and Tinajas Altas mountains (see Figure 4). AUX-2 is a small, outlying airfield remaining from the World War II training era (see Table 3). This field has been redeveloped to support training activities with AV-8B and C-130 aircraft that simulate operations out of a forward primitive airfield and, in the case of the AV-8B, operations from a U.S. Navy Landing Helicopter Assault ship. In terms of airspace, the AUX-2 operating area includes the vicinity around AUX-2 out to roughly 3 miles to include the aircraft traffic patterns for the landing surfaces at the auxiliary airfield. The parachute drop zone is adjacent to AUX-2. The rifle range, EOD operating area, and live ordnance jettison area are located in the near vicinity. The Cannon Air Defense Complex, located north of AUX-2 in the northwest corner of BMGR—West, provides administrative, support, and training areas for a Marine Air Control Squadron. The complex is a permanent facility of about 0.3 square mile in size with a developed cantonment area. The perimeter is fenced to deter unauthorized access.

The Moving Sands and Cactus West target complexes provide a variety of scored air-to-ground targets for bombing, rocketry, and strafing. Ordnance deliveries on both complexes are restricted to the use of inert training practice munitions. Both the Moving Sands and Cactus West complexes include circular target areas of 1,500 feet in radius (about 400 acres) in aggregate for training in conventional bombing and rocketry and separate targets for training in low-angle strafing (see Table 3). The Moving Sands Complex also contains a Mobile Land Target (MLT). The MLT is a remotely controlled movable target that runs in a racetrack pattern and can be operated at various speeds up to 50 miles per hour.

The Cactus West conventional target is a bull's-eye type of target designed to train aircrews in the basic mechanics of delivering air-to-ground ordnance in a structured and tightly controlled target setting. The Moving Sands conventional bull's-eye was reconfigured in the late 1990s to represent a developed urban site with simulated streets and buildings set within the original 1,500-foot-radius circular impact area. This target was reconfigured to train aircrews how to engage targets in an urban environment. The Moving Sands urban target is also approved for air-to-ground use of lasers to designate targets for attack. A posted laser hazard area extends around this target to warn surface users not to enter this area because of the risk of eye damage (see Figure 4).

The TACTS Range area is about 674 square miles in size and supports a mix of Marine Corps and Navy training purposes. The TACTS Range, which has nine remote TIS stations and one TIS/master station, is directly analogous to the GRMDS within BMGR—East in terms of subsystem components for supporting training



TACTS Range threat emitters simulate enemy air defense missile or artillery sites by transmitting radar energy. the energy radiated could be hazardous if visitors move inside the clearly marked safety perimeter.

in air-to-air combat. Eight of the TIS stations and the TIS/master station are located within BMGR—West; in aggregate, these facilities occupy a minuscule portion of BMGR—West (see Figure 4).

In contrast to the GRMDS, which is currently limited to air-to-air combat training, the TACTS Range can also simulate air-to-ground weapons delivery missions and surface-to-air air defense threats. The air-to-ground component of the TACTS Range is supported by 112 individual tactical target sites situated in 11 complexes that simulate airfield installations, power stations, fuel storage facilities, buildings, railway facilities, anti-aircraft missile and gun positions, and military vehicles. Aircrews training in air-to-ground weapons delivery maneuver their aircraft as to attack these targets but neither carry nor release actual munitions. Instead, electronic signals (rather than actual ordnance drops) are used to simulate the trajectories of munitions. As a result, there are no munitions impact areas. The TACTS Range is also configured to accommodate the use of airborne targeting lasers to designate the target intended for attack, but only for targets within the main airfield complex (see Figure 4). The targeting lasers used could cause eye injury or blindness if an observer looks directly into the laser light. No personnel are allowed to enter this area when it is active without eye protection that is approved for the specific type of laser in use.

A variety of Marine Corps ground units use ground support areas to conduct realistic field training in association with aviaion units.

Seventeen mobile and 18 fixed electronic air defense threat emitter sites are located adjacent to existing roads within BMGR—West east of the Gila and Tinajas Altas mountains. These facilities support the surface-to-air component of the TACTS Range. Threat emitter sites are locations where electronic equipment that transmits tracking and targeting radars is periodically operated (mobile emitters) or permanently installed (fixed emitters) to simulate anti-aircraft defenses. Controllers operate the threat emitters to challenge aircrews training within the TACTS Range with realistic air defense threats. The radar energy transmitted by the threat emitters is sufficient to be a radiation burn hazard to people close to the transmitter and in the path of the transmitted energy. Personnel on the ground at active mobile threat emitter sites keep people clear of hazardous areas associated with the emitter equipment. The fixed threat emitter transmitters are sufficiently elevated to ensure that no emitted energy can strike the ground at a range any less than that needed to attenuate the energy to a safe level. The fixed emitters are posted and fenced within an area of about 100 feet by 100 feet to keep people and large mammals (e.g., Sonoran pronghorn) a safe distance from the site. In aggregate, the mobile and fixed threat emitter sites constitutes less than 2 acres.

Most ground support areas are about 0.38 square mile (1 square kilometer) in size. In aggregate, the 39 ground support areas within BMGR—West constitutes about 10,922 acres (17 square miles). This is only about 2 percent of the total area of BMGR—West and about 0.5 percent of the total area of the BMGR (see Table 3). Thirty-five ground support areas are located within the TACTS Range area and four as of yet unused support areas are located west of the Gila and Tinajas Altas mountains. Ground support areas are used for Marine Corps troop deployments during a number of training exercises including the semiannual Weapons Tactics Instructor (WTI) Course. Marine air defense, air control, communications, and command units select from the 39 ground support areas to identify deployment sites that are favorable for performing their missions. Most of these ground troop deployments occur in association with aviation training exercises to promote coordination between Marine air and ground forces.

Signs throughout the BMGR warn people of areas where hazardous activities occur. Stay safe and heed these warnings.

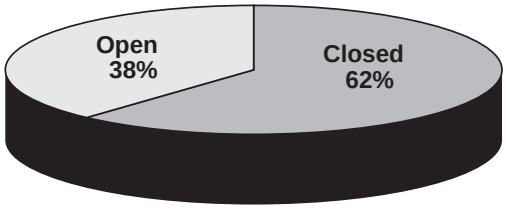
Military Safety and Security, Public Access, and BMGR Management Units

The basic purpose of the BMGR is to provide a secure location in which military training activities can be freely conducted without endangering the safety of military personnel or civilians and without interference or interruption. The simplest way of accomplishing these safety and non-interference goals would be to close the BMGR to all public access. However, the MLWA of 1999 and the Sikes Act both provide that sustainable use of the BMGR environment should be supported subject to the safety and security requirements necessary to support the military purposes of the range.[31] In accordance with these provisions, public access to the BMGR is supported under two conditions. First, public access is permissible only in those areas of the range where it is compatible with the safety or security requirements of military operations. Second, public access to the range is by permit only. All BMGR visitors must obtain a range entry permit from an approved Air Force, Marine Corps, USFWS, or BLM office prior to entering those areas of the range that are open to public access. Persons wishing to access the BMGR for recreation need to be aware that procedures for checking in and out of the range differ for BMGR—East and BMGR—West because of differences in the types of military operations that occur in these areas. These procedures are explained when the required range access permit is obtained.

Approximately 62 percent the of the BMGR must be restricted from public access because of ongoing hazards associated with munitions delivery training, known or suspected high concentrations of UXO on the ground surface, laser use hazards, airfield safety and security, or other safety or security requirements at training or support sites (Figure 5). Safety hazards or security concerns are present within the other areas of the BMGR only at selected times or in selected confined locations, such as electronic instrument sites. As a result, public access can generally occur in 38 percent of the BMGR on a regular basis as long as certain necessary restrictions regarding access to local electronic instrument, training, support, or resource protection sites are observed (Figure 6). Access to the range by all military personnel and civilians is regulated by permit at all times and in all locations. Approximately 80 percent of all the range areas open to general public access are in BMGR—West where hazardous weapons range and laser hazard areas are concentrated principally in areas located west of the Gila and Tinaja Altas mountains. The area of BMGR—West usually open to public access encompasses about 521,000 acres (814 square miles), or about 75 percent of the BMGR—West land area (see Figures 5 and 6). All or portions of this area are temporarily closed to public access occasionally to support scheduled training activities that present safety hazards or have security requirements. The portion of BMGR—West east of the Copper Mountains is closed to public access each year (beginning in 2001) from 15 March to 15 July, which is the fawning season for the Sonoran pronghorn, a federally listed endangered species. Fawning season represents the period of greatest sensitivity to disturbance for this animal.

Public access to BMGR—East is limited to about 133,000 acres (208 square miles), which is almost 13 percent of the BMGR—East land area. Most of BMGR—East is restricted from general public access because it supports three tactical ranges, four manned ranges, and an air-to-air firing range as well as Gila Bend AFAF, AUX-6, and other training and support areas requiring security (see Figures 5 and 6).

Figure 6
Portions of BMGR Closed and Open to General Public Access



California
Arizona
95
Wellton
Tacna
Dateland
Stoval
Sentinel
8
Gila Bend
Gila Bend AFAF
AUX-6
Small Arms Range
85
Manned Range 4
EOD Training Range
Manned Range 3
Manned Range 2
Manned Range 1
North Tactical Range
East Tactical Range
South Tactical Range
Cannon Air Defense Complex
AUX-2
Rifle Range
TACTS Range
Laser Hazard Area
Cactus West Target
Moving Sands Target
Air-to-Air Firing Range
1
2
3
4
5
6
7
Ajo
Why
86
85
United States
Mexico

Military Facilities and Areas Off Limits to Public Access without Special Authorization

- Auxiliary Airfield
- Air Force Small Arms Range
- Roads
- Target Lead-In, No Public Use
- Restricted Airspace Boundary
- Airspace Subrange Boundary

- Military Training Hazard/Safety Buffer Area / or Security Area, Closed to General Public Access
- Open to General Public Access with BMGR Permit
- Military Ground Support Area (Off limits when in use)
- 3 BMGR Management Unit
- Public Access Limited - Daylight Use Only, No Camping
- TACTS Range Laser Hazard Area (Special Use Scheduling Required for Public Access)
- Cabeza Prieta National Wildlife Refuge
- Organ Pipe Cactus National Monument
- Sonoran Desert National Monument

N

4 0 4 8

Scale in Miles

BMGR Management Units and Existing Public Access Restrictions

Figure 5

g:\bmgr\gis\projects\apr\community_report\fig_5.apr

Paloverde-mixed cactus-scrub communities are found in upland environments on the BMGR.

Seven management units have been identified within the BMGR (three within BMGR—West and four within BMGR—East) to facilitate the planning and implementation of natural and cultural resources management activities (see Figure 5). Numbered one through seven from west to east, the surface areas of these units include the following:

- Management Unit 1 - approximately 230,000 acres
- Management Unit 2 - approximately 265,000 acres
- Management Unit 3 - approximately 195,000 acres
- Management Unit 4 - approximately 280,000 acres
- Management Unit 5 - approximately 440,000 acres
- Management Unit 6 - approximately 138,000 acres
- Management Unit 7 - approximately 188,000 acres

Biodiversity

The variety of life forms and processes and the environment in which they occur. Biodiversity includes the number and variety of living organisms, the genetic differences among them, the communities and ecosystems in which they occur, and the ecological and evolutionary processes that keep them functioning, yet ever changing and adapting (DoD Instruction 4715.3).

Natural and Cultural Resources of the BMGR

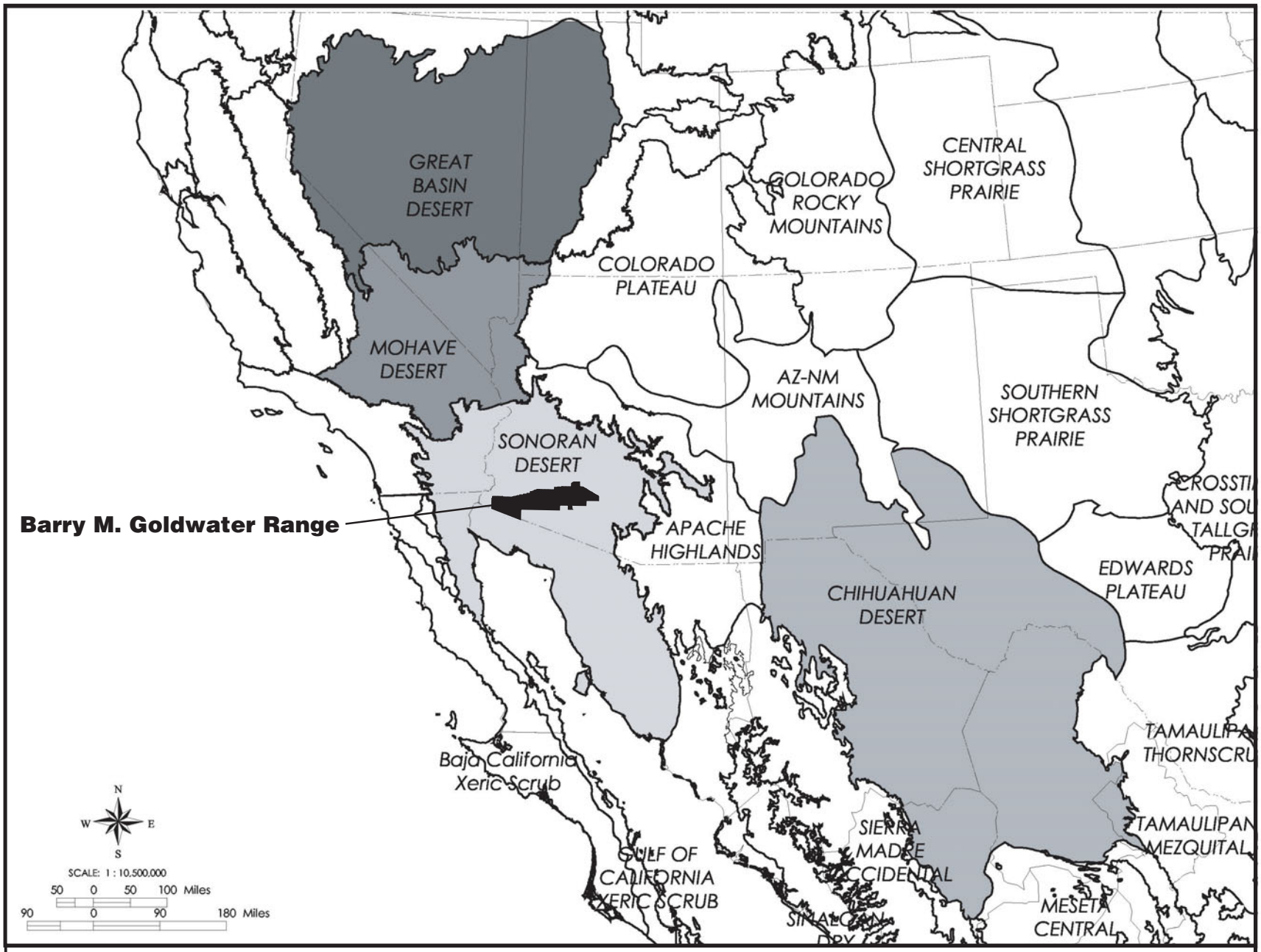
Parallel to its continuing value as an essential national defense asset, the BMGR is also nationally significant as a critical component in the largest remaining tract of relatively unfragmented and undisturbed Sonoran Desert in the United States. Composed of the BMGR, Cabeza Prieta NWR, Organ Pipe Cactus NM, Sonoran Desert NM, and BLM Sentinel Plain area, this tract currently totals about 5,000 square miles of which the range contributes almost 55 percent of the land area. The BMGR spans the full 130-mile east-west breadth of this contiguous land unit and encompasses the spectrum of ecological gradients that define the interface between the Arizona Upland and Lower Colorado River Valley subdivisions of the Sonoran Desert. Once considered as a barren wasteland by many, the Sonoran Desert is now recognized as the most biologically diverse of the great North American deserts. In its entirety, the Sonoran Desert Ecoregion encompasses 55 million acres (almost 86,000 square miles) in southern Arizona, southeastern California, Baja California, and northwestern Sonora, Mexico (Figure 7). It is the most tropical of the three North American warm deserts (Chihuahuan, Mojave, and Sonoran) and displays the greatest number of plant communities.

High numbers of native mammal, reptile, amphibian, and bird species are also present. More than 2,500 pollinator species have been documented (invertebrates, birds, and bats), including the highest known diversity of bee species in the world. More than 500 bird species migrate through, breed, or permanently reside in the ecoregion—nearly two-thirds of all species that occur in northern Mexico, the United States, and Canada combined. Although the BMGR constitutes only 3 percent of the Sonoran Desert Ecoregion, as a landscape unit, the range is nevertheless representative of much of the diversity of landforms, elevation, and rainfall gradients that contribute to the rich biodiversity found throughout this ecoregion in Arizona.

Earth Resources

From a landform perspective, the BMGR is located in the Basin and Range Physiographic Province of Arizona, which is distinguished by broad alluvial valleys separated by steep, discontinuous, northwest to southeast trending mountain ranges. The modern landscape of the BMGR is primarily the result of past mountain building activity and erosion from natural forces. Human activities have caused some accelerated erosion but, so far, such effects are locally isolated.

There is a broad representation of geological processes and landforms on the range. The mountain ranges are formed of all three main rock types—igneous, metamorphic, and sedimentary. All or portions of 15 named mountain ranges are found in the range. The BMGR's highest mountains (the Sand Tank Mountains, which rise to nearly 3,700 feet MSL) and valley floors (which are higher than 1,200 feet in elevation) occur in the easternmost portion of the range. In contrast, the lowest elevations on



Source Data:① The Nature Conservancy. ②Bailey, R.G. 1998. Ecoregions Map of North America: Explanatory note. Misc. Publ. 1548. U.S. Department of Agriculture, Forest Service. Washington, DC. 10 p.
Dinerstein E., D.M. Olson, D.J. Graham, A.L. Webster, S.A. Primm, M.P. Bokkbinder, and G. Ledec. 1995. A conservation assessment of the terrestrial ecoregions of Latin America and the Caribbean. The World Bank, Washington, D.C.

Sonoran Desert Ecoregion

Figure 7

Rugged mountain ranges and other upland areas dominate the easternmost portions of the range.

the range are found within its westernmost extent where valley floor elevations are generally below 500 feet and fall below 200 feet MSL in some locations. The Gila Mountains rise to over 3,100 feet, but mountain peak and ridge line elevations around 2,000 feet are more typical in the western portion of the range. The westernmost valley plains of the BMGR are within the Gran Desierto dune system—the largest dune system in North America—which extends both to the west and south of the BMGR. Smaller sand dune systems have also formed in several other range locations. Of these local dune systems, the Mohawk Sand Dunes in the central portion of the range are the most expansive.

The alluvial valleys of the BMGR are, in reality, deep bedrock basins filled with silt, clay, sand, and gravel deposits. These deposits can be more than 10,000 feet deep. Along many of the mountain bases, sloping masses of alluvial fill material known as bajadas extend outward like fans to taper more gradually than the mountains themselves into the generally flat valley floors.

Extensive sheet-like lava flows are another distinct geologic feature that occurs in some parts of the range. These flows form irregular plains with rough basalt surfaces. Portions of the largest such lava flow in southern Arizona extend into the northern part of the range south of the community of Sentinel.

The BMGR region is in a tectonically stable area with very few earthquakes and very few active faults. Earthquake activity felt in the area is typically from temblors centered in southern California.

Climate

Average annual rainfall in the higher elevations of the easternmost portion of the BMGR may exceed 11 inches, which is similar to the precipitation typically received in the Tucson region. Average rainfall over the entire range, however, is less than 5 inches per year. Yuma averages less than 3 inches of rain per year and Gila Bend averages between 5 and 6 inches. It is important to understand that these averages are based on long-term weather patterns and that no location within the Sonoran Desert is assured of receiving a given level of rainfall during any season.

Annual rainfall within this desert is highly variable in terms of its amount, seasonal timing, and geographic distribution. Most of the annual precipitation typically occurs during mid-winter from frontal types of storms or during a late summer monsoon-type of rainfall period, which often produces scattered thunderstorms with intense rainfall. Because of the irregularity of rainfall patterns, some range locations may receive little or no rain during the same year in which other areas receive average or above-average precipitation. The Sonoran Desert is also subject to frequent and sometimes prolonged droughts that can limit some areas or broad regions to little or no rainfall for one or more years. As a result, some of the interior valleys of the BMGR are estimated to average only 0.5 inch of rain per year. When the stable weather patterns that enforce the aridity of the BMGR region periodically break down, all or portions of the range may receive two to three times the normal annual rainfall, sometimes in only one or a few storms.

The overall effects of the prevailing low rainfall patterns are exacerbated by high temperatures and regional evaporation potentials that greatly exceed all known rainfall regimes. Summer daytime temperatures on the range often are in excess of 110˚ Fahrenheit and annual evaporation potentials, which vary from greater than 86 inches in the western part of the range to about 72 inches in the eastern portion, greatly exceed the available precipitation.

Surface Water

The presence of surface water on the BMGR is very limited. There are no perennial or intermittent streams present on the range and ephemeral stream flow in otherwise dry stream beds occurs only in immediate response to sizable rainfall events. Surface water drainage on the BMGR is outward from the mountain ranges and, for most of the area, ultimately northward by numerous feeder washes into the larger washes that flow to

the Gila River, which in turn flows west into the Colorado River. Some storms cause flash flooding in the smaller mountain drainages and short-term flooding in the larger valley washes and floodplains.

Natural flooding events are highly variable in frequency and intensity and can have a large effect on natural community composition, structure, and function. With the exceptions of a few drainages that have been interrupted or diveretd by backcountry roads, most of the watersheds and drainage systems on the range are both unaltered and unregulated in any substantial way and lack impediments to natural surface water flows. A few drainages on the range are closed in that they empty into playas, or usually dry lakes, that only hold water temporarily after substantial rains. Some rain water that is critical to many wildlife populations collects in natural rock catchments (also known as tanks or tinajas), human-modified natural catchments, or artificially constructed tanks where the water may persist for weeks or months without recharge until it eventually evaporates or is consumed by wildlife. Tinajas, seeps, and playas were important resources to Native Americans and archaeological evidence of this affiliation is often located at or near these surface water resources.

Biological Resources

As previously noted, when considered over the whole of its landscape, the BMGR harbors a relatively unfragmented and undisturbed ecosystem that is recognized for the continuing predominance of natural processes and its rich biodiversity. The BMGR landscape is unfragmented in terms of both land use and management and, with the exception of State Route 85, is free of developed structures that may disrupt ecological connectivity across its entire span. The BMGR landscape is, of course, a contiguous component of the larger BMGR-Cabeza Prieta NWR-Organ Pipe Cactus NM-Sonoran Desert NM Complex (south of Interstate 8) that, again with the exception of State Route 85, is also free of structures that may disrupt ecological connectivity. The full significance, health, and resiliency of the ecosystem shared by these land management units can only be appreciated when viewed in context of this greater complex, the whole of which is under various statutory and administrative land management policies that favor long-term conservation management. Within the BMGR, the emphasis placed on resource conservation and ecosystem management must be compatible with sustaining the capability of the range to support its military mission.

Although species inventory lists for a specific region are always subject to revision as new survey information becomes available, these lists nevertheless provide a rough index of the biodiversity of a region. The best available inventories currently show that nearly 290 species of plants, over 200 bird species, more than 60 species of mammals, 10 amphibian species, and over 50 reptile species are known to occur or potentially may occur within the BMGR and Cabeza Prieta NWR combined (most species identified in these lists are believed to occur in both the military range and the wildlife refuge).

The plant life of the BMGR is characteristic of the Arizona Upland and Lower Colorado River Valley subdivisions of the Sonoran Desert. The Arizona Upland Subdivision is restricted principally to the portions of the range east of State Route 85 where the slopes and upper bajadas of the Sand Tank and Sauceda mountains provide favorable soils and elevations, and where an adequate precipitation regime prevails. The plant communities within most of the rest of the range are within the Lower Colorado River Valley Subdivision. The distribution of plant communities within both of these subdivisions is influenced by the diverse landscape of the range, in which the series of widely spaced rugged mountain ranges, broad valley plains, sand dune systems, surface water drainages, and playas are the most important features.

In upland foothills and mountain slope areas, paloverde, ocotillo, saguaro cactus, and a wide variety of other cacti and shrubs are the dominant plant life. The Sand Tank Mountains receive sufficient rainfall to also support isolated communities of chaparral and woodland vegetation. The broad, flat intermountain valleys of the range are dominated by creosote bush and creosote bush-bursage associations, which often grow in stands that cover many tens of thousands of acres. These plant communities cover about three-fourths of the non-mountainous terrain of the BMGR.

Although infrequent, flooding can quickly make BMGR roads impassable.

Some of the best remaining examples of Sonoran Desert natural communities are found within the BMGR.

Washes are lined by riparian vegetation communities consisting of taller trees and shrubs including blue paloverde, ironwood, and smoke tree. Wash vegetation stands in strong contrast to the creosote bush-dominated flats of valley floors and is present because of the subsurface water that accumulates in the plant root zones as a result of stormwater surface runoff from summer monsoon and winter rains. This taller, more dense vegetation provides important habitat for many species of wildlife.

The distributions of landforms, plant communities, and water catchments on the BMGR provide diverse habitats that are utilized by many species of wildlife. The diversity and density of vegetation in upland areas and along washes provide habitat for a wide variety of birds. Examples include Harris' hawk, American kestrel, elf owl, Gila woodpecker, cactus wren, curve-billed thrasher, Gambel's quail, white-winged dove, and greater roadrunner. Birds typically present in lowland areas include LeConte's thrasher, black-throated sparrow, and lesser nighthawk. The known mammalian residents of the range include Sonoran pronghorn, desert bighorn sheep, javelina, mountain lion, kit fox, coyote, bobcat, jackrabbit, and many species of bats and rodents. Sonoran Desert toad and red-spotted toad are among the amphibians that are at least locally common on the range. Reptile species characteristic of the range include leopard lizard, flat-tailed horned lizard, desert horned lizard, desert tortoise, collard lizard, fringe-toed lizard, western diamondback rattlesnake, sidewinder rattle-snake, Mojave rattlesnake, and gopher snake.

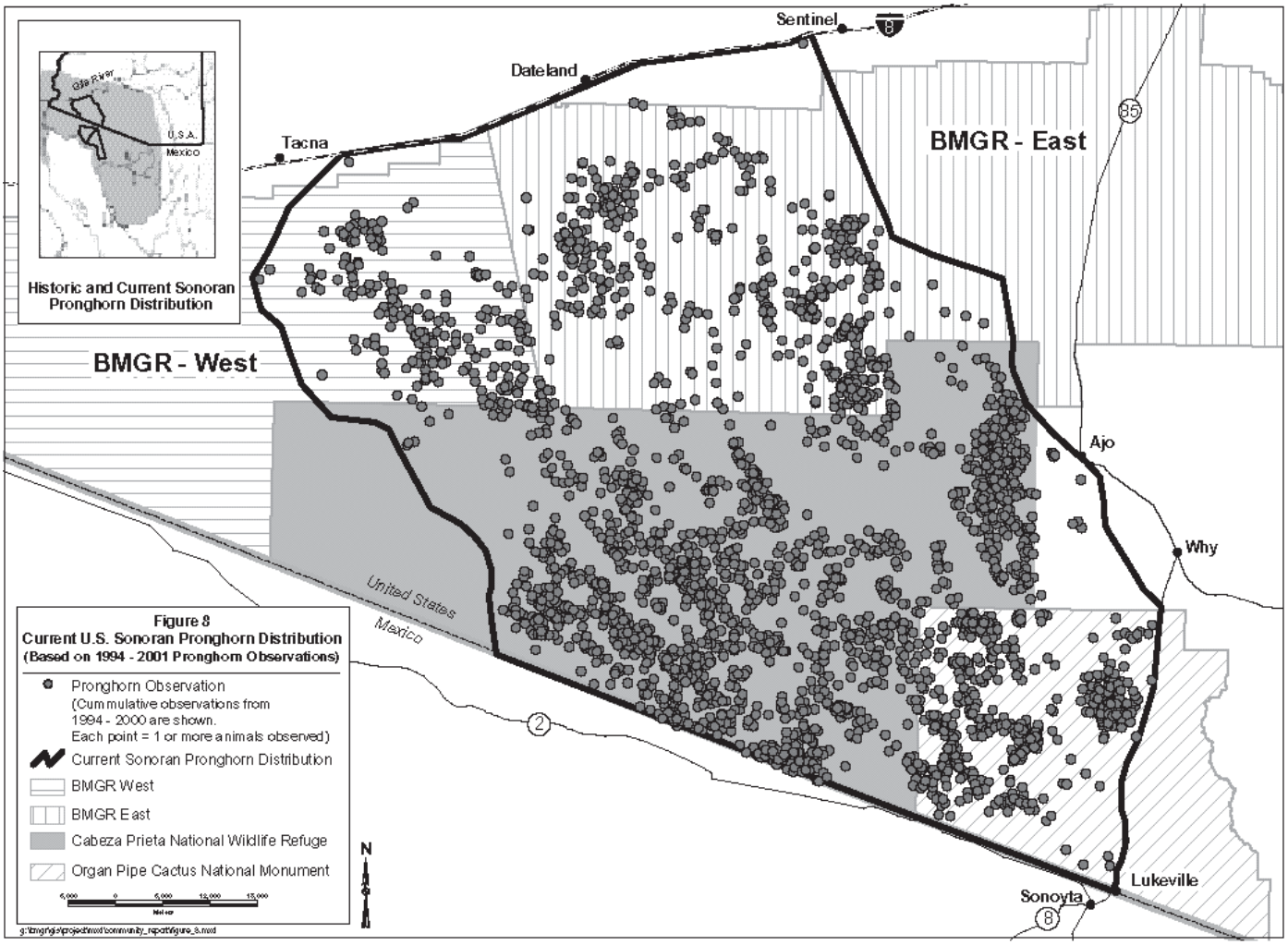
In addition to indigenous wildlife populations that are not in jeopardy for their survival, two federally listed endangered wildlife species—Sonoran pronghorn and lesser long-nose bat—and one federally listed threatened plant species—Peirson's milk vetch—are known to occur on the BMGR. Of these, only the Sonoran pronghorn appears to be dependent upon habitats within the range and the adjacent Cabeza Prieta NWR and Organ Pipe Cactus NM for its continued survival (see Sonoran pronghorn sidebar). The cactus ferruginous pygmy-owl is another federally listed endangered wildlife species that potentially may occur within the easternmost portions of the BMGR, but this species has not yet been confirmed as utilizing the range. The flat-tailed horned lizard, which is a resident of the westernmost portion of the range, has been proposed for federal listing as a threatened wildlife species. Several other federally listed endangered or threatened species may be found occasionally or rarely on the range, principally as migratory transients, but habitat needed to support resident populations of these species is not found within the BMGR.

Sonoran Pronghorn

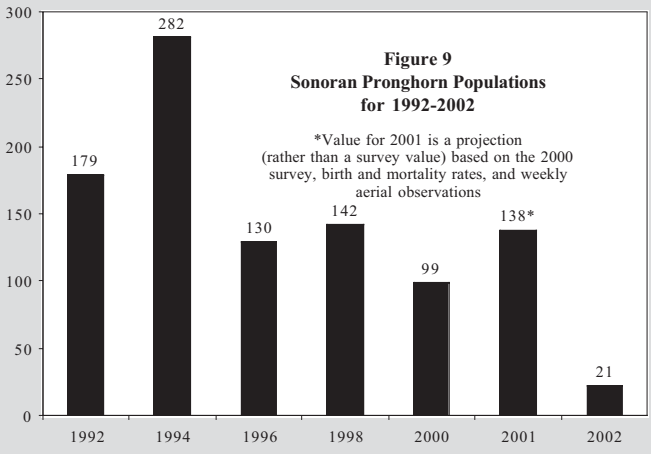
Sonoran pronghorn is a critically endangered subspecies of the American pronghorn that in the later 1800s was found over much of southwestern Arizona, northwestern Mexico, and southeastern California (Figure 8). By the inception of the BMGR in 1941, the numbers and distribution of this species had been greatly reduced. Causes for these early declines included habitat loss; habitat fragmentation from the development of roads, railroads, and canals; hunting (prior to the 1920s); disease; and competition from livestock grazing.

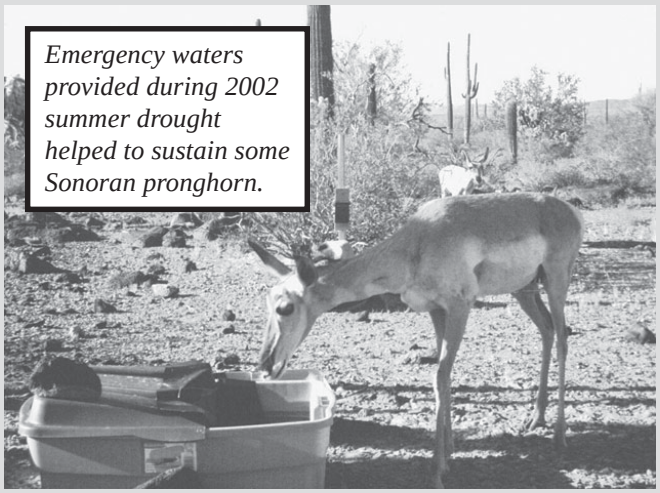
The current distribution of the Sonoran pronghorn is limited to three geographically isolated populations—one in the United States and two in Mexico. The U.S. population is limited primarily to the central BMGR, Cabeza Prieta NWR, and Organ Pipe Cactus NM west of State Route 85. This animal is also periodically found within two parcels of land managed by the BLM. One of these BLM parcels is in the vicinity of Ajo and the second is between the BMGR and Interstate 8 and between Dateland and Sentinel. The BMGR accounts for about 40 percent of the Sonoran pronghorn's range in the United States. The two Mexican populations are located south of the Cabeza Prieta NWR and Organ Pipe Cactus NM and are geographically isolated from each other into eastern and western groups by Mexico Highway 8. The U.S. and Mexican populations are isolated from each other by Mexico Highway 2. Recovery of the U.S. Sonoran pronghorn population is one of the most pressing current resource management challenges within the BMGR, Cabeza Prieta NWR, Organ Pipe Cactus NM, and adjacent BLM lands.

Estimates of the Sonoran pronghorn population in Arizona were made several times prior to 1992, starting in 1925. Although these estimates are not directly comparable because of the variety of methods used and geographical areas studied, they all indicate that relatively low numbers of pronghorn, 50 to 150 animals, were present in southwestern Arizona within an increasingly small area of distribution. AGFD initiated regular biennial aerial surveys of the Sonoran pronghorn population in 1992 and has completed surveys through 2002. Findings from these surveys show that this population varied from 23 to 282 individuals between December 1992 and December 2002 (Figure 9).



Considerable management and research attention has been focused on the Sonoran pronghorn since the early 1990s. This work has included weekly aerial monitoring of pronghorns fitted with radio telemetry collars and extensive field studies of Sonoran pronghorn habits and behaviors. The information from these monitoring and research programs has resulted in compelling findings about the Sonoran pronghorn's daily and seasonal movements, birth and mortality rates, habitat preferences and surface water requirements, susceptibility to predation, age-class distribution, and tolerance of aircraft overflight noise and ground-based human activities. This recent body of work has also provided important understandings about the vulnerability of the Sonoran pronghorn to drought and the critical implications that highways, railroads, irrigation canals, and other developed land uses—which have curtailed this animal's movements, fragmented and destroyed its habitat, and subdivided its population—hold for its continued survival.





Emergency waters provided during 2002 summer drought helped to sustain some Sonoran pronghorn.

The State of Arizona has also identified a number of wildlife species of special concern to the state that are present or potentially present within the BMGR. In addition to the aforementioned federally listed or proposed endangered and threatened species, other wildlife of special concern include the California leaf-nosed bat, Cowles fringe-toed lizard, and desert tortoise. State-listed plant species present on the range include acuña cactus, sand food, and crested (fan-topped) saguaro. Wildlife and plants of special concern may be locally abundant within a given area but are in need of special management consideration to ensure the continued survival and health of their statewide populations.

In general, the health of the BMGR ecosystem and that of most of its individual resident wildlife populations is considered to be good. This ecosystem has benefited from a number of factors that have worked in aggregate to conserve the physical and biological components and functions of this system in such a way that, with a few exceptions, natural processes and native species retain the capacity to perpetuate the system. Among these beneficial factors are the following:

- More than 60 years of land withdrawal for military use has excluded livestock grazing, mining, agricultural crop development, and other types of economic land uses that have the potential to alter or impair the physical and biological components of an ecosystem in a manner that compromises its long-term health.

- Adjacent and ecologically interconnected lands within the Cabeza Prieta NWR, Organ Pipe Cactus NM, and Sonoran Desert NM have also benefited from more than 60 years of increasingly protective conservation management. In aggregate, the BMGR, national wildlife refuge, two national monuments, and some other contiguous properties (that were formally within the military range and that have not been developed) constitute approximately 5,000 square miles of relatively unfragmented and undisturbed Sonoran Desert (the land area within the BMGR and Sonoran Desert NM east of State Route 85 and south of Interstate 8 includes over 550,000 acres [about 860 square miles] and the land area within the BMGR, Cabeza Prieta NWR, and Organ Pipe Cactus NM west of State Route includes almost 2,500,000 acres [about 3,900 square miles]).

Some wildlife managers have recently supported a viewpoint that the Sonoran pronghorn is a species whose typically low remaining numbers reflect a natural balance with the capacity of its available habitat to support its population and that sufficient habitat is available within its current distribution (almost 1.8 million acres—2,800 square miles—with additional contiguous habitat accessible for its use) to ensure its long-term survival. In other words, ensuring the survival of the Sonoran pronghorn is principally a matter of protecting its current habitat from further loss or fragmentation and protecting individual pronghorn from other potentially deleterious human activities.

Conserving the Sonoran pronghorn's available habitat and protecting the animal from activities that could jeopardize its survival continue to be uncontested as important management objectives. However, recent management and research work offer a new perspective of the pronghorn that is in sharp contrast to the earlier traditional viewpoint that its available habitat, if protected, has the natural capacity to offset periodically low population numbers. The new perspective is that the U.S. Sonoran pronghorn population has a tenuous hold on survival and the habitat available to the animal offers virtually no potential for its long-term maintenance survival, let alone growth, without active management intervention. The Sonoran Pronghorn Recovery Team (composed of the USFWS, AGFD, Air Force, Marine Corps, BLM, and others) is using this new viewpoint as a basis for developing management actions for the recovery of this endangered species. The key tenets of this viewpoint are as follows:

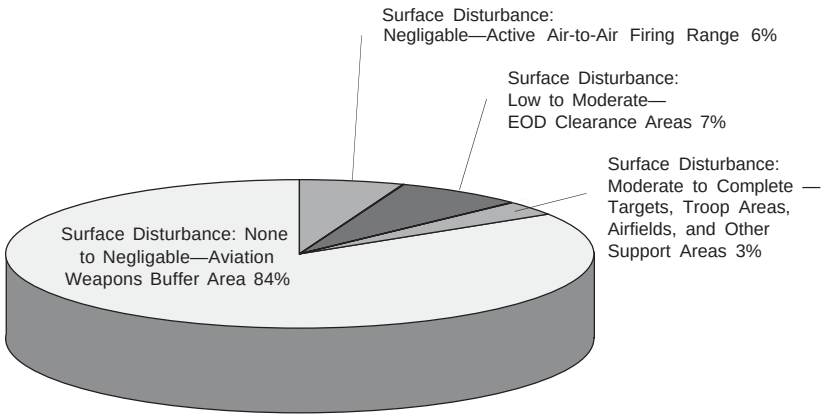
- The surviving U.S. Sonoran pronghorn population is isolated within its current distribution by barriers that restrict its access to formerly used habitats and from interbreeding with the two populations of this species in Mexico. The principal barriers to pronghorn movement in the United States include Interstate 8, the railroad, and irrigation canals to the north; State Route 85 to the east; and the international boundary fence line and Mexico Highway 2 to the south (see Figure 8). There are no apparent barriers curtailing pronghorn movements to the west or northeast of its current distribution into areas of the BMGR that this species is not occupying. The habitat in these locations may be less preferable.

- Precipitation patterns and the resulting growth of forage of sufficient quality and quantity to support adult pronghorn health and the survival of fawns to the late spring and summer months is the single most important factor driving the irregular cycles of growth and decline observed on an almost yearly basis in the Sonoran pronghorn population (see Figure 9). During years with average to above

- Aviation training is the primary military use of the range, which has limited military activities that result in physical disturbances of soils and vegetation communities to a small portion of the range area (Figure 10).

- Long-term environmental damage from historic livestock grazing and mining operations that occurred prior to the establishment of the range in 1941 is limited.

Figure 10
Proportions of the BMGR Physically Affected by Over 60 Years of Military Use



average seasonal rainfall, the habitat currently available to the Sonoran pronghorn produces forage in sufficient quantity and quality to maintain both the adult population and support fawn survival. Seasonally well-timed precipitation and forage growth can support sufficient fawn recruitment to offset normal adult mortalities and allow the population to maintain or grow. The population increases registered in 1994 and 2001 are evidence of the effects of adequate precipitation and forage. During drought years with below average and/or poorly timed seasonal rainfall, the habitat currently available to the Sonoran pronghorn does not produce forage in sufficient quantity or quality to support fawn survival during the late spring and summer months. As a result, few or no new members are recruited to the pronghorn population; with normal adult mortalities, the population declines. If the drought is severe or persists over several years, adult mortality will also increase above normal and the population will crash as observed during the 1994 to 1996 and 2001 to 2002 timeframes.

- The vulnerability of the Sonoran pronghorn to drought cycles is not new; local populations of these animals have no doubt always declined during the periodic drought cycles that are natural in the BMGR ecoregion. The severity of drought impact on the remaining animals, however, has been greatly exacerbated by the barriers that prevent their movement out of drought-stricken habitat to search for better forage conditions and water. Prior to the fragmentation of its full historic habitat and historic reductions in its numbers, the Sonoran pronghorn population coped with drought, in part, as its affected members sought out more favorable habitat conditions through nomadic migrations. Drought is almost never uniformly severe over the broad expanse of the historic range of the Sonoran pronghorn because the rainfall that does occur is not uniformly distributed. The nomadic behavior of these pronghorn continued to play out as drought abated and forage conditions improved in affected areas. A surviving population within an affected area could, of course, once again grow, but its recovery could also be enhanced by the movement of other Sonoran pronghorn into the area from more vital populations from less affected regions. The benefits of this freely functioning nomadic strategy are no longer available to the Sonoran pronghorn. Although these animals can no longer fully employ their nomadic survival strategy in response to drought, pronghorn within the U.S. population typically retreat in the late spring from the full expanse of the remaining habitat available to them to portions of the Cabeza Prieta NWR and Organ Pipe Cactus NM where their best chance to find adequate forage is usually found. They generally remain in these areas until fall or winter rains restore the forage conditions across their larger area of distribution. Severe drought effects throughout its available habitat over the last several precipitation cycles (and particularly in 2000 and 2002) have brought the remaining population to a perilously low level.

- The key to facilitating the recovery of the Sonoran pronghorn is to employ management methods that will enhance fawn survival during drought years by enhancing the availability of forage and water within the currently available habitat. At this time, no measures that would decrease the vulnerability of pronghorn to drought by breaching barriers to their nomadic movements or otherwise restoring their access to former habitats are realistically possible. Measures that will enhance natural forage conditions and water availability at critical locations and times within the current Sonoran pronghorn distribution are necessary to ensure at least a minimum level of annual fawn recruitment into the adult pronghorn population. Extinction of the U.S. Sonoran pronghorn population is highly likely if these fawn recruitment measures are not implemented.

Planning and implementing Sonoran pronghorn recovery actions is the responsibility of the Regional Director of the USFWS and the Sonoran Pronghorn Recovery Team and is not within the scope of the proposed INRMP for the BMGR. Rather, it will be the objective of the proposed INRMP to support the Sonoran Pronghorn Recovery Plan and the actions of the recovery team. Development of irrigated forage enhancement plots at several locations within the BMGR and Cabeza Prieta NWR is a current high-priority recovery action planned for implementation before the summer season of 2003.

- Long-standing restrictions on public access, for military safety and security purposes, have limited the scope and intensity of damage to vegetation communities and soils from recreation activities.

- A generally remote location has historically isolated the BMGR, Cabeza Prieta NWR, Organ Pipe Cactus NM, and Sonoran Desert NM from many population pressures; accelerated population growth in this region is a fairly recent phenomenon.

- Favorable surface drainage patterns–from the interior of the BMGR, Cabeza Prieta NWR, Organ Pipe Cactus NM, and Sonoran Desert NM outward into external land areas–isolate the range, wildlife refuge, and national monuments from deleterious effects from water-borne pollutants and sedimentation as well as from hydrological modifications of upstream watersheds

A strong indicator of the health of the BMGR ecosystem is that all of the wildlife species and plant communities believed to be present in 1941 when military use began are still found within the range today. These communities and nearly all species are also believed to be present in secure populations. The health of some of the natural plant communities probably has been enhanced by the elimination of livestock grazing within the BMGR, and eventually within the Cabeza Prieta NWR and Organ Pipe Cactus NM. The continued success of indigenous wildlife species is most likely attributable, in large part, to the conservation of the natural vegetative habitats within the range over the last 60 plus years with little or no adverse modification.

Although the current ecological health of the BMGR is good and the foreseeable outlook for its continued health is generally positive, transportation, utility, and land use developments and other human activities within the local region have altered or otherwise affected the greater ecosystem in which the range is located. The major influences of these developments and activities on the range ecosystem must be recognized if the proposed INRMP is to support effective conservation and, where necessary, rehabilitation of the health of both the system and that of some of its key components. Key developments and activities that have altered or otherwise affected the BMGR ecosystem in some manner include the following:

- Highways, railroads, irrigation canals, fence lines, and other land uses external to the BMGR or the Cabeza Prieta NWR, Organ Pipe Cactus NM, or Sonoran Desert NM (e.g., Interstate Highway 8, the Santa Fe Railroad, irrigation canals, agricultural fields, and urban centers along the northern boundary of the BMGR, and Federal Highway 2, agricultural fields, and urban centers in Mexico south of the Cabeza Prieta NWR and Organ Pipe Cactus NM) that curtail the natural movement patterns of some wildlife species to and from the range or these associated protected areas

- Alteration or loss of plant communities, perennial rivers, other wildlife habitat components, and wildlife populations external to the BMGR or the Cabeza Prieta NWR, Organ Pipe Cactus NM, or Sonoran Desert NM (e.g., agricultural and urban development and the dewatering of the Gila River north and west of the BMGR, and agricultural and urban development and the dewatering of the Rio Sonoyta south of the Cabeza Prieta NWR and Organ Pipe Cactus NM) that function or formerly functioned as a part of the greater ecosystem that these land units occupy

- Alteration or loss of plant communities and other wildlife habitat components internal to the BMGR or the Cabeza Prieta NWR, Organ Pipe Cactus NM, or Sonoran Desert NM as a result of activities such as past livestock grazing, mining, recreation, and military land use as well as current military and nonmilitary land uses

- State Route 85, which is the only major continuous barrier within the BMGR and Organ Pipe Cactus NM, that is curtailing movement of some wildlife species within the range, Cabeza Prieta NWR, and Organ Pipe Cactus NM

- The spread of exotic, invasive, or noxious animal and plant species–such as trespass livestock, feral burros, and Sahara mustard–within the BMGR, Cabeza Prieta NWR, Organ Pipe Cactus NM, and Sonoran Desert NM

Scale is the key to assessing how these developments and activities affect or have affected the ecosystem in which the BMGR is located. For example, highways, railroads, land use, and other developed barriers contributed to the decline of the Sonoran pronghorn and continue to impact the recovery potential for this endangered species (see Sonoran pronghorn sidebar). These generally external barriers are unlikely to have direct effects on plant communities and smaller mammals and reptiles within the interior of the BMGR, Cabeza Prieta NWR, or Organ Pipe Cactus NM. The loss of the Sonoran pronghorn, however, would eliminate one of the largest nomadic herbivores within these contiguous areas, which would, in turn, affect the plant communities upon which this species has long foraged, animals that may compete for some of these same food sources, and possibly on predators that prey upon pronghorn.

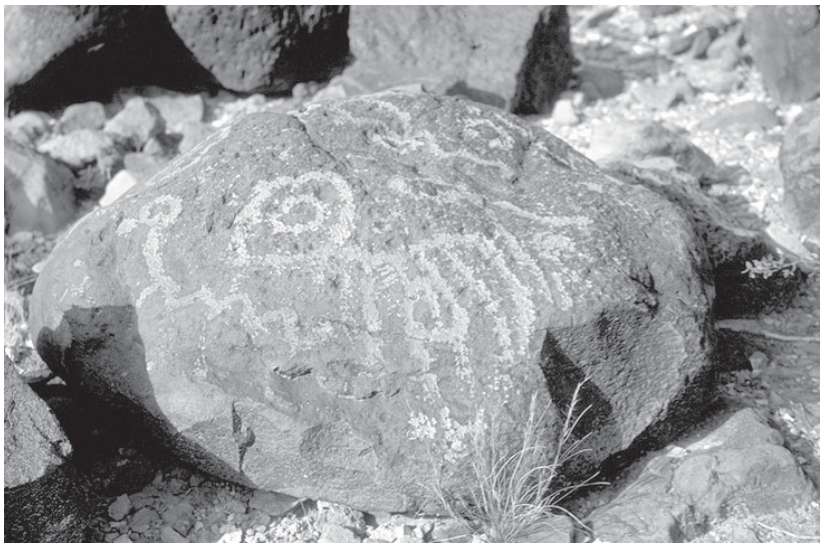
Historic livestock grazing is an activity that affected the ecosystem common to the BMGR, Cabeza Prieta NWR, and Organ Pipe Cactus NM over a broad area and enduring timeframe by altering the composition and health of some indigenous plant communities. Although livestock grazing has been varyingly excluded from these areas for more than 25 to 60 years, residual adverse effects of this past activity can still be noted within plant communities in some locations.

An activity over recent years that has raised concerns for its adverse effects on the greater ecosystem in which the BMGR is located is off-road vehicle travel by persons entering the United States from Mexico illegally and by U.S. Border Patrol agents that are assigned with the responsibilities to apprehend these individuals and, when necessary, rescue them from the hazards of the Sonoran Desert. The direct impacts from this off-road vehicle use are generally localized, but this use is leading to the creation of new roads and off-road vehicle use is also believed to promote the spread of invasive plant species. In addition, persons entering the country illegally are leaving considerable trash and discarded property behind. The potential indirect effect of this activity eventually may result in more systemic ecosystem effects.

Overall, the ecosystem that is common to the BMGR, Cabeza Prieta NWR, and Organ Pipe Cactus NM is not believed to have been deeply or extensively altered by either previous or current activities internal or external to these areas. The management system to be adopted under the proposed INRMP, however, must consider that the range ecosystem has been affected by humans within the region if effective measures to conserve and rehabilitate natural resources and support sustainable public use within the BMGR are to be implemented.

Cultural Resources

The same factors that have helped to preserve the natural resources of the BMGR–exclusion of surface disturbing, non-military land uses and correspondingly limited land surface disturbance by military activities–have also helped to protect cultural resources. As a result, well-preserved cultural remains within the BMGR provide a remarkable record that tells of thousands of years of human habitation and use of this region. These remains include both prehistoric and historic sites and features. The most common type and greatest number of cultural resource sites on the BMGR are from the prehistoric period. Most of these sites consist of scatters of broken pottery and stone tools where Native American groups camped and gathered wild foods and other useful natural resources. Some larger sites may have been base camps or villages where people stayed for longer periods of time and where they may have farmed, when the climate was favorable, using dry land farming techniques that are still known to some contemporary Native Americans. Many prehistoric sites are widely scattered and isolated from other cultural remains. Some archaeological sites contain rock art including petroglyphs (designs pecked into a rock surface), pictographs (painted designs), or intaglios (ground drawings produced by either moving rocks into alignments or by clearing surface rocks to produce large designs on the ground surface). Additional artifacts or other evidence that may be found at prehistoric sites include clusters of fire-cracked rock, sleeping circles, rock shelters, or rock cairns and shrines. Historic and prehistoric foot trails, that provide evidence of travel routes



Rock art is found in diverse locations across the BMGR.

followed by early Native Americans and early European explorers, can also still be found within the BMGR.

People of European ancestry (Euroamericans) entered the area known today as southwestern Arizona in the sixteenth century. Evidence in the archaeological record of their earliest activities in the BMGR region relate primarily to mining and ranching activities. The earliest American settlement and travel period in the BMGR region began with the California gold rush period in approximately 1850. Remaining archaeological evidence of these early travelers and settlers also relates primarily to mining and ranching activities. The physical record of military training on the range (dating from World War II but also including evidence of the Korean, Vietnam, and Cold war eras) comes primarily in the forms of auxiliary airfields, targets, buildings, test facilities, and expended ordnance.

Cultural resource inventories, conducted to date by the Air Force and Marine Corps, have principally focused within areas directly affected by military activities and have identified more than 1,200 archaeological sites and other cultural resource features. In addition to their archaeological value, many prehistoric places and features are culturally significant to Native American tribes.

The interpretive significance of the archaeological record within the BMGR is greater than that of any of its individual features. The true significance of the record lies in the fact that the relatively undisturbed landscape of the range still harbors evidence of the aggregate spectrum of human activities that have occurred here through time. Both small and large sites–from individual prehistoric stone-working areas to village sites or individual historic mining prospects to well-developed mine complexes–are important components of this mosaic, and the loss of any individual component may diminish the ability of archaeologists and anthropologists to understand and interpret the whole. Cultural resources are protected in accordance with applicable federal law. The Air Force and Marine Corps are responsible for managing these resources within the BMGR in accordance with these laws .

Resource Management Goals

One of the early tasks in the proposed INRMP planning process was the development of resource management goals to guide development of the INRMP in accordance with the MLWA of 1999, Sikes Act, and other applicable legal requirements and in view of conditions particular to the BMGR. Resource management goals were developed on both a policy and resource-specific basis. The steps in the goals development process included (1) early collaborative development by the Core Planning Team of five preliminary goals that establish overarching management policy upon which resource-specific management goals could be developed; (2) development by the Core Planning Team of preliminary resource-specific goals for the management and use of BMGR resources; (3) public review and comment on the preliminary policy and resource-specific management goals during both the August 2000 scoping period and the November 2000 public workshop; and (4) final review and revision of the preliminary policy and resource-specific management goals in view of the public comments received. Both the policy and resource-specific management goals have range-wide application. The five overarching policy goals are non-resource-specific and are in support of and consistent with the military mission, protection and conservation of natural and cultural resources, and public access to the BMGR. In no implied order of importance, the five management policy goals are as follows:

- Maintain and enhance the natural resources to ensure that these resources are sustained in a healthy condition for compatible uses (for example, low-impact recreation) by future generations, while supporting the existing and future military purposes of the BMGR.

- Manage cultural resources in accordance with the BMGR ICRMP.

- Provide for public access to BMGR resources for sustainable multipurpose use, consistent with the military purposes of the range (including security and safety requirements) and ecosystem sustainability.

- Apply ecosystem management principles through a goal- and objective-driven approach that recognizes social and economic values; is adaptable to complex, changing requirements; and is realized through effective partnerships among private, local, state, tribal, and federal interests.

- Meet or exceed the statutory requirements of the MLWA of 1999, Sikes Act, and other applicable resource management regulatory requirements.

The resource-specific goals address earth, water, vegetation, wildlife, and visual resources; transportation; recreation; Native American access; non-military and perimeter land use; and special natural/interest areas. The resource-specific based goals are presented in Table 4, also in no implied order of importance.

Descriptions of the Alternative Resource Management Strategies

The draft EIS includes detailed consideration of five alternative strategies, including the proposed action and no-action alternative, for managing natural and cultural resources and public access within the BMGR. Each of these alternative management strategies represents a potential resource management framework that could be implemented as the INRMP for the BMGR. The alternative selected in the ROD that will follow the final EIS will constitute the management framework that will be implemented. After the ROD has been signed, the INRMP will be prepared based on the selected alternative management strategy and other material extracted from the ROD and final EIS. Thus, the INRMP will establish the resource management program for the BMGR based on the strategy selected through the EIS process.

The five alternative management strategies analyzed in the EIS were developed in accordance with NEPA, which requires conducting a rigorous comparative analysis to identify the environmental impacts of a reasonable range of alternatives, including the no-action alternative, before selecting the final preferred action, which in this case would be the framework for managing BMGR resources. The selection of the reasonable management alternatives addressed in this EIS was guided by criteria that included statutory and regulatory guidance and BMGR resource management goals developed during the EIS process. In accordance with the MLWA of 1999 and Sikes Act, each resource management alternative studied in the development of the proposed INRMP must meet the following requirements:

- support the use of the BMGR to ensure the preparedness of the armed forces
- provide for proper management and protection of its natural and cultural resources (which is to include natural resource conservation and rehabilitation)
- provide for sustainable multipurpose public access and use of the range consistent with the requirements of its military purposes

Based on these requirements and other applicable law, the first four of five alternative management strategies were developed with public input during the public scoping and workshop phases of this process. These four strategies, identified as A through D (with A as the no-action alternative), were designed to represent the full spectrum of management requirements and issues identified during these early planning phases. Each alternative outlines resource management guidance for 17 separate areas of resource management, referred to hereinafter as resource management elements, that will be addressed in the proposed INRMP (Table 5). There are only a few differences among Alternative Management Strategies A, B, C, and D for

TABLE 4
RESOURCE-SPECIFIC MANAGEMENT GOALS

Resource Management Category	Management Goal(s)
Earth Resources	■ Implement best management practices to control and prevent excess soil erosion, implement soil conservation measures, and restore or rehabilitate degraded landscapes wherever practicable, subject to budgetary constraints.
Water Resources	■ Manage water resources to protect, maintain, and improve water quality; to conserve water to prevent lowering of the water table levels; and to ensure compliance with regulatory requirements while maintaining unrestricted access for military purposes.
Vegetation Resources	■ Protect and conserve plant communities and species diversity. ■ Identify, protect, conserve, manage, and comply with regulatory requirements for threatened and endangered plant species or otherwise important or sensitive plant species. ■ Inventory the range for occurrence and distribution of exotic plant species and implement management measures for their removal or control. ■ Restore or rehabilitate altered or degraded plant communities wherever practicable, subject to budgetary constraints. ■ Incorporate the principles of ecosystem management and promote biodiversity.
Wildlife Resources	■ Protect and conserve wildlife habitat, species diversity, and viable populations. ■ Identify, protect, conserve, manage, and comply with regulatory requirements for federally threatened and endangered wildlife species or otherwise significant or sensitive species. ■ Restore or rehabilitate human-altered or degraded wildlife habitats wherever practicable, subject to budgetary constraints. ■ Incorporate the principles of ecosystem management and promote biodiversity. ■ Control trespass livestock.
Visual Resources	■ Protect or enhance the integrity and diversity of visual resources (including scenic qualities of the landscape) on the BMGR.
Transportation	■ Develop a BMGR transportation plan that addresses continued land-based access to the BMGR for military training and testing; provides access for wildlife research and wildlife habitat management, land management, and law enforcement by federal and state agencies; and provides access for wildlife-oriented recreation and sustainable multipurpose use by the public. ■ Establish policies and provide procedures that ensure that vehicle use on the BMGR will be controlled and directed so as to protect resources, promote safety, and minimize conflicts among the various uses of the BMGR.
Recreation	■ Provide for public access and use of natural resources/BMGR lands for sustainable multi-purposes when such activities are compatible with mission activities and other considerations such as security, safety, and resource sensitivity. ■ Assess the continuing applicability of Special Recreation Management Area (SRMA) designations in consideration of their incompatibility with military operations. ■ Manage all activities in accordance with the ICRMP for the BMGR.
Native American Access	■ Provide for Native American access to Traditional Cultural Places and sacred sites, consistent with the military mission and natural resource management goals.
Non-Military Land Use	■ Develop a program for addressing rights-of-way on the BMGR. Participate in local initiatives to advance ecoregional planning and biodiversity goals.
Perimeter Land Use	■ Cooperate with land managers of adjoining property for conservation, public relations, and compliance benefits. ■ Develop strategies, in coordination with ranchers when feasible, to reduce trespass livestock occurrences.
Special Natural/Interest Areas	■ Recognize and review existing special resource management areas, such as Areas of Critical Environmental Concerns (ACECs) and the backcountry byway, and assess the continuing applicability of special management provisions for the protection of these areas.

some resource management elements (e.g., wildfire management). However, for a number of the resource management elements, the alternative strategies propose sharply differing management actions. For example, the range of alternatives for the motorized access and unroaded area management would define markedly different management futures.

In brief, Alternative Management Strategy A, the no-action alternative, would continue the ongoing resource management and public access practices of the existing BMGR resource management plan. BLM prepared the existing plan, the Lower Gila South Resource Management Plan (Goldwater Amendment) in 1990 in accordance with the MLWA of 1986 (P.L. 99-606), which preceded the MLWA of 1999, and the Federal Land Policy and Management Act (FLPMA). Alternative Management Strategy A would maintain the entire existing BMGR road network (Figures 11 and 12).

Alternative Management Strategy B is generally similar to Strategy A except that Strategy B includes the potential to expand public motorized access and recreation use opportunities. Strategy B would also support the construction of two new bypass roads around the northwest corner of the Cabeza Prieta NWR/Wilderness that are proposed to lessen the need for law enforcement agencies to use motorized vehicles on administrative trails (former administrative roads) within the wilderness during routine patrols.

Strategies C and D are distinguished from Strategies A and B principally in that they would close progressively larger numbers of roads considered to be redundant to motorized vehicle access and would limit some other public use opportunities in favor of an increasing emphasis on resource conservation and protection. Strategies C and D would also progressively increase the emphasis on the use of ecosystem management principles through the application of ecosystem monitoring and adaptive management. Strategy C would support the Cabeza Prieta NWR bypass roads, but Strategy D would not. Strategies C and D would both direct the conservation of blocks of unroaded land within the BMGR that are 3,000 acres or more in area to the extent that such conservation is compatible with the military mission or other agency requirements.

Following the scoping and workshop phases, the Core Planning Team worked together to develop a fifth alternative management strategy, the proposed action, which is not signified by a letter. The proposed action combines various management elements from each of Alternative Management Strategies A, B, C, and D (for example, Strategy D for resource inventory and monitoring and Strategy C for managing special natural/interest areas) to form a unique, composite management alternative. The proposed action differs from the other alternative management strategies in one other important way. Alternative Management Strategies A, B, C, and D each would be applied to the BMGR on a range-wide basis. The proposed action, in contrast, would be

TABLE 5
PROPOSED INRMP RESOURCE MANAGEMENT ELEMENTS

1.	Resource Inventory and Monitoring
2.	Special Natural/Interest Areas
3.	Motorized Access and Unroaded Area Management
4.	Camping and Visitor Stay Limits
5.	Recreation Services and Use Supervision
6.	Rockhounding
7.	Wood Cutting, Gathering, and Firewood Use, and Collection of Native Plants
8.	Hunting
9.	Recreational Shooting
10.	Utility/Transportation Corridors
11.	General Vegetation, Wildlife, Wildlife Habitat, and Wildlife Waters
12.	Special Status Species
13.	Soil and Water Resources
14.	Air Resources
15.	Visual Resources
16.	Wildfire Management
17.	Perimeter Land Use, Encroachment, and Regional Planning

Alternative Management Strategy A: Complete existing road network - Includes red, green, red-black, green-black, and blue roads
Alternative Management Strategy B: Complete existing road network plus proposed Cabeza Prieta NWR bypass BMGR West Only - Includes red, green, blue, red-black, green-black, and brown-black roads
Alternative Management Strategy C: Existing road network but with reduced local area redundancy - Includes red, green, red-black, green-black, and brown-black (BMGR West only) roads.
Alternative Management Strategy D: Minimum road network needed for agency missions - Includes red and red-black roads
Alternative Management Strategy C: Restricted to Government use
Alternative Management Strategy D: Restricted to Government use
Alternative Management Strategies B or C: Restricted to Government use

Military Facilities and Areas Off Limits to Public Access without Special Authorization

- Auxiliary Airfield
- Air Force Small Arms Range
- GRMDS Instrument Site
- TACTS Fixed Instrument Site
- Military Training Hazard/Safety Buffer Area - No Public Access
- 20 Military Ground Support Area and Area Number (Off limits when in use)
- Annual EOD Clearance Area
- Five-year 1 km EOD Clearance Area
- Retired Five-year 1 nautical mile EOD Clearance Area

- Roads Outside of BMGR
- Restricted Airspace Boundary
- Airspace Subrange
- Air-to-Air Range Airspace Boundary
- BMGR Boundary
- Expired BMGR Lands
- Wildlife Water
- Air Force Small Arms Range

- BLM Special Recreation Management Area (SRMA)
- Public Access Limited to Selected Times
- Cabeza Prieta National Wildlife Refuge
- General Public Access with BMGR Permit
- BLM Area of Critical Environmental Concern (ACEC)
- 2 BMGR Management Unit and Number

N

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Scale 1:350,000
Scale in Miles
Contour Interval 30 meters

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Gila Bend
Gila Bend AFAF
AUX-6
Sentinel
Dateland
Stoval
RMCP-4
RMCP-3
RMCP-2
RMCP-1
R-2301E
R-2305
White Hills
EOD Training Range
Manned Range 3
Manned Range 4
Manned Range 2
Manned Range
Sentinel Plain Lava Flow SRMA
Crater Range SRMA
Air-to-Air Firing Range
Mohawk Mountains and Sand Dunes ACEC
Drive Through Use Only, No Overnight Stays in this Area
Mohawk Mountains
Mohawk Dunes
Mohawk Valley
San Cristobal Valley
Aguila Mountains
Granite Mountains
Growler Mountains
Childs Valley
Childs Mountain
Crater Range
North Tactical Range
South Tactical Range
East Tactical Range
No Refuge Access
Target Run-in Line
No Overnight Stays in this Area
Saucedo Mountains
Sand Tank Mountains
Bender Spring
Ajo
R-2305
R-2304
Needed for Public Entry
Needed for Refuge Management
Needed for Refuge Management
Needed for Refuge Management
Not Needed for Refuge Management
Needed for Refuge Management
Cabeza Prieta National Wildlife Refuge

BMGR - East
Road System Alternatives
Figure 11

BMGR - West
Road System Alternatives
Figure 12

Alternative Management Strategy A: Complete existing road network - Includes red, green, red-black, green-black, and blue roads
Alternative Management Strategy B: Complete existing road network plus proposed Cabeza Prieta NWR bypass BMGR West Only - Includes red, green, blue, red-black, green-black, and brown-black roads
Alternative Management Strategy C: Existing road network but with reduced local area redundancy - Includes red, green, red-black, green-black, and brown-black (BMGR West only) roads.
Alternative Management Strategy D: Minimum road network needed for agency missions - Includes red and red-black roads
Alternative Management Strategy C: Restricted to Government use
Alternative Management Strategy D: Restricted to Government use
Alternative Management Strategies B or C: Restricted to Government use

Scale 1:350,000
3 1.5 0 3 6
Scale in Miles
Contour Interval 30 meters

Military Facilities and Areas Off Limits to Public Access without Special Authorization

- Auxiliary Airfield
- Developed Training Site
- TACTS Fixed Instrument Site
- TACTS Elect. Scored Target
- TACTS Emitter Site
- Military Training Hazard/Safety Buffer Area - No Public Access
- 20 Military Ground Support Area and Area Number (Off limits when in use)
- Closed Ground Support Area
- TACTS Range Laser Hazard Area - Special Use Scheduling Required for Public Access
- Roads Outside of BMGR
- Restricted Airspace Boundary
- Airspace Subrange
- Air-to-Air Range Airspace Boundary
- BMGR Boundary
- Expired BMGR Lands
- Wildlife Water
- Air Force Small Arms Range
- Military Ground Support Zone
- BLM Special Recreation Management Area (SRMA)
- Public Access Limited to Selected Times
- Cabeza Prieta National Wildlife Refuge
- General Public Access with BMGR Permit
- BLM Area of Critical Environmental Concern (ACEC)
- 2 BMGR Management Unit and Number
- Yuma Desert Flat-tailed Horned Lizard Habitat Management Area
- El Camino del Diablo Backcountry Byway

N

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applied range-wide for 14 out of the 17 resource management elements (Table 6). For the other three management elements–recreation services and use supervision; rockhounding; and wood cutting, gathering, and firewood use and collection of native plants–the proposed action would apply different management strategies within different BMGR resource management units (see Figure 5).

Although additional composite alternatives could be developed from Alternative Management Strategies A, B, C, and D, the five alternatives studied in the draft EIS represent the full range of actions that are needed for the BMGR and are appropriate to the special statutory guidance that governs resource management on military installations. These and other key defining elements of Alternative Management Strategies A, B, C, and D and the proposed action are summarized below.

Alternative Management Strategy A (No-action Alternative)

Alternative Management Strategy A represents the no-action alternative, which is required by NEPA, and would continue the ongoing management practices of the Goldwater Amendment. The scope of the Goldwater Amendment established overall natural and cultural resource management direction for the range and prescribed that a series of component subplans be prepared including habitat management plans (HMPs) and a transportation plan. An HMP titled Lechuguilla-Mohawk Habitat Management Plan and Environmental Assessment was finalized in 1997and partially implemented for BMGR–West. A draft HMP titled Draft Barry M. Goldwater East Habitat Management Plan and Environmental Assessment has been developed, but has not been finalized or implemented for BMGR–East. Development of the transportation plan included an extensive multiple-year inventory of roads within the BMGR but did not reach the actual plan preparation stage because Congress passed the MLWA of 1999 two years earlier than anticipated, effectively cutting the BLM's management tenure short.

The Goldwater Amendment and HMPs would be adopted and continued through the proposed INRMP under the no-action alternative. While some people are satisfied with the ongoing management practices, some interest groups and individuals have criticized these plans for providing minimal protection for and conservation of natural resources. In spite of the criticisms,

TABLE 6
PROPOSED ACTION
SELECTED RESOURCE MANAGEMENT STRATEGY ELEMENTS

	Resource Management Element	*Selected Resource Management Strategy*							
			Management Unit Application						
		Range-wide Application	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
1	Resource Inventory and Monitoring	D							
2	Special Natural/Interest Areas	C							
3	Motorized Access and Unroaded Area Management	C							
4	Camping and Visitor Stay Limits	C							
5	Recreation Services and Use Supervision		D	C	D	D	D	D	D
6	Rockhounding		D	C	C	D	D	D	D
7	Wood Cutting, Gathering, and Firewood Use, and Collection of Native Plants		D	C	C	C	C	C	C
8	Hunting	B							
9	Recreational Shooting	C							
10	Utility/Transportation Corridors	C							
11	General Vegetation, Wildlife, Wildlife Habitat, and Wildlife Waters	C							
12	Special Status Species	C							
13	Soil and Water Resources	D							
14	Air Resources	A							
15	Visual Resources	B							
16	Wildfire Management	B							
17	Perimeter Land Use, Encroachment, and Regional Planning	D							

Alternative Management Strategy A is reasonable as it represents the no-action alternative and is consistent with the MLWA of 1999, which supports incorporating existing plans in the proposed INRMP. The existing plans are also compatible with the military mission of the BMGR, provide measures for resource protection and conservation, and support public use that is both compatible with the military mission and the prescribed resource protection and conservation measures.

Some components of the existing plans, however, would need to be modified before they could be implemented under the Sikes Act. For example, the Goldwater Amendment established seven special management areas (see Figures 11 and 12), in accordance with FLPMA, as follows:

- Mohawk Mountains and Sand Dunes ACEC
- Tinajas Altas Mountains ACEC
- Gran Desierto Dunes ACEC
- Yuma Desert and Sand Dunes Habitat Management Area (HMA)
- Crater Range SRMA
- Sentinel Plain Lava Flow SRMA
- El Camino del Diablo Backcountry Byway

Because the proposed INRMP must be prepared in accordance with the Sikes Act, rather than FLPMA, the ACECs, SRMAs, and Backcountry Byway could no longer exist pro forma. (The HMA has since been expanded and reauthorized through a multiple agency cooperative agreement to protect the flat-tailed horned lizard.) These special management areas, however, could effectively be continued through designating them as special interest/natural areas under Sikes Act regulations.

Existing wildlife management practices would continue under Alternative Management Strategy A and there would be no defined shift in emphasis towards ecosystem management methods. Strategy A would include the construction of up to two new waters (seven were planned, five have been constructed) plus the repair, redesign, and/or redevelopment of three existing wildlife waters within BMGR—West and the development of 15 new waters and the repair, redesign, and/or redevelopment of 13 existing waters within BMGR—East.

Alternative Management Strategy A would allow for the construction of the Yuma Area Service Highway (ASH) in the northwest corner of BMGR–West as currently planned and being analyzed in separate NEPA documentation.

Public access and recreation opportunities were the most frequently identified issues of concern during scoping. As a result, six of the 17 resource management elements of the proposed action and alternatives address future management of public access to and use of the BMGR. While other resource management elements are fully considered in the EIS, public access and use are given extra emphasis in this Community Report. Table 7 summarizes how the various alternatives would affect public access and use.

Existing public access and recreation opportunities would be retained under Alternative Management Strategy A (see Table 7). As the no-action alternative, Management Strategy A would keep the entire existing road network within the range (consisting of 2,222 miles of inventoried roads) open for vehicular use and the public would continue to have access to that portion of the network that is currently open to public use (Table 8 and see Figures 11 and 12). A total of 973 miles, or 44 percent, of the existing BMGR roads are currently available for general public access, with 79 percent (767 miles) of these roads located within BMGR—West.

A determination of the number of existing unroaded areas with surface areas in 20 various size categories from 1 to 120,000+ acres, including 3,000 acres or less and 3,001 acres or more as one of the category dividing points, was performed through a geographic information system (GIS) analysis. A 50-foot buffer was added to each side of the roads to represent the distance that vehicles currently may be pulled off of the road for parking. Excluded in the analysis of unroaded areas were 172,700 acres of established military vehicle-use areas and other developed military use areas (this total excludes 101,040 acres of military use area designated as the Air-to-Air Firing Range, which is predominantly unroaded–see Table 3). The GIS analysis results show that under Alternative Management Strategy A, the existing condition, there are 526 areas of 3,000 acres or less within the BMGR and 121 existing unroaded areas of 3,001 acres or more (Figure 13). Given the existing road network, the largest unroaded area is about 95,000 acres located in BMGR-East west of North and South Tactical Ranges (Figures 14 and 15).

TABLE 7
PUBLIC ACCESS AND RECREATION OPPORTUNITIES UNDER THE PROPOSED ACTION AND ALTERNATIVE MANAGEMENT STRATEGIES

Alternative Management Strategy (Proposed Action Highlighted In Gray)			
A	**B**	**C**	**D**
Motorized Access and Unroaded Area Management			
■ Retain entire existing road network	■ Retain entire existing road network	■ Retain the majority of existing motorized access unless a compliance or resource conservation issue arises	■ Limit motorized public access to those roads that are also necessary for military mission or other specific agency requirements
■ Minimize new road construction by coordinating access needs and avoiding conflicts and replication in road use	■ Close selected roads to public access where an agency mission or resource protection issues conflict with public use	■ Close selected roads to public access where an agency mission or resource protection issues conflict with public use	■ Limit motorized public access to those roads that are also necessary for military mission or other specific agency requirements
■ Develop a transportation plan to facilitate effective management of an appropriate road system with a provision to close roads not meeting land management, public, or military needs	■ Retain existing level of motorized public access unless a compliance issue arises	■ Restrict access on redundant roads in localized areas	■ Close roads not meeting military or agency needs
	■ Allow future motorized public access to currently restricted locations if changes in military activities eliminate safety or security restrictions in those locations	■ Allow future motorized public access to currently restricted locations if changes in military activities eliminate safety or security restrictions in those locations	■ Allow future motorized public access to currently restricted locations if changes in military activities eliminate safety or security restrictions in those locations
	■ Evaluate the foreseeable need for and generalized effect of developing additional roads for motorized public or agency use in general terms; proposals for construction of such roads would be reviewed in detail in accordance with NEPA and other regulatory requirements on a case-by-case and site-specific basis	■ Evaluate the foreseeable need for and generalized effect of developing additional roads for agency purposes in general terms; proposals for construction of such roads would be reviewed in detail in accordance with NEPA and other regulatory requirements on a case-by-case and site-specific basis	■ Evaluate the foreseeable need for and generalized effect of developing additional roads for agency purposes in general terms; proposals for construction of such roads would be reviewed in detail in accordance with NEPA and other regulatory requirements on a case-by-case and site-specific basis
	■ Implement site specific planning for two bypass roads that would reroute vehicle traffic around rather than through the northwest corner of the Cabeza Prieta NWR	■ Implement site specific planning for two bypass roads that would reroute vehicle traffic around rather than through the northwest corner of the Cabeza Prieta NWR	■ Prohibit development of new public use roads
		■ Evaluate allowing public use of new roads developed for general agency purposes	■ Implement increased public education and enforcement measures, including public education on the natural and cultural resource values of unroaded areas
		■ Conserve existing unroaded areas of 3,000 acres or more to the extent they are compatible with military or agency missions	■ Maintain existing blocks of unroaded areas of 3,000 acres or more to the extent they are compatible with military or agency requirements
			■ Restore closed roads where feasible and prudent to remediate a degraded ecological process or enhance wildlife usage
Camping and Visitor Stay Limits			
■ Allow dispersed self-contained (i.e., non-vehicle-based, such as backpacking) camping in all areas open to the public	■ Allow dispersed self-contained camping in all areas open to the public	■ Allow dispersed self-contained camping in all areas open to the public	■ Allow dispersed self-contained camping in all areas open to the public
Allow vehicle-based camping within 50 feet of existing roads designated as open to public use	■ Allow vehicle-based camping within 100 feet of existing roads designated as open to public use	■ Allow vehicle-based camping within 50 feet of most existing roads designated as open to public use; restrict camping along certain road segments for resource protection purposes	■ Allow vehicle-based camping within 50 feet of most existing roads designated as open to public use; restrict camping along certain road segments for resource protection purposes
■ Limit vehicle-based camping stays to 14 consecutive days within a 28-day period	■ Limit vehicle-based camping stays to 14 consecutive days within a 28-day period except by special use permit	■ Limit vehicle-based camping stays to 14 consecutive days within a 28-day period except by special use permit	■ Limit vehicle-based camping stays to 7 consecutive days within a 28-day period except by special use permit
	■ Define and prescribe reasonable rules for the disposal of human sewage and solid waste in accordance with applicable federal, state, and local regulations	■ Define and prescribe reasonable rules for the disposal of human sewage and solid waste in accordance with applicable federal, state, and local regulations	■ Define and prescribe reasonable rules for the disposal of human sewage and solid waste in accordance with applicable federal, state, and local regulations
		■ Assess benefits and effects of establishing designated camping areas and implement a decision based on the findings	■ Assess benefits and effects of establishing designated camping areas and implement a decision based on the findings
		■ Require all campsites to be more than 1/4-mile away from designated natural and cultural resources that are sensitive to impacts arising from human-induced disturbances	■ Require all campsites to be more than 1/4-mile away from designated natural and cultural resources that are sensitive to impacts arising from human-induced disturbances

TABLE 7
PUBLIC ACCESS AND RECREATION OPPORTUNITIES UNDER THE PROPOSED ACTION AND ALTERNATIVE MANAGEMENT STRATEGIES

Alternative Management Strategy (Proposed Action Highlighted In Gray)			
A	**B**	**C**	**D**
Recreation Services and Use Supervision			
		Proposed Action—Unit 2	Proposed Action—Units 1, 3, 4, 5, 6, 7
■ Prohibit public off-road vehicle travel	■ Evaluate the need for and effects of allowing public off-road vehicle travel in designated areas	■ Prohibit public off-road vehicle travel	■ Prohibit public off-road vehicle travel
■ Prohibit on- and off-road racing	■ Prohibit on- and off-road racing	■ Prohibit on- and off-road racing	■ Prohibit on- and off-road racing
■ Allow motorized public travel in dry streambeds and wash bottoms in accordance with the Draft Barry M. Goldwater East HMP	■ Allow motorized public travel in designated washes, when dry	■ Restrict motorized public travel from all washes, except where the wash is a designated part of the road system open to the public and is dry	■ Restrict motorized public travel from all washes, except where the wash is a designated part of the road system open to the public and is dry
■ Require a special use permit for a single party with 50 or more vehicles	■ Require a special use permit for a single party with 30 or more vehicles	■ Require a special use permit for a single party with 20 or more vehicles	■ Require a special use permit for a single party with 10 or more vehicles
■ Require compliance with general vehicle operating rules, which include requiring all vehicles and operators to be licensed for highway driving under Arizona laws and regulations and prohibiting the operation of vehicles in a manner that is reckless, careless, negligent, or likely to cause damage to natural or cultural resources	■ Require compliance with general vehicle operating rules, which include requiring all vehicles and operators to be licensed for highway driving under Arizona laws and regulations and prohibiting the operation of vehicles in a manner that is reckless, careless, negligent, or likely to cause damage to natural or cultural resources	■ Require compliance with general vehicle operating rules, which include requiring all vehicles and operators to be licensed for highway driving under Arizona laws and regulations and prohibiting the operation of vehicles in a manner that is reckless, careless, negligent, or likely to cause damage to natural or cultural resources	■ Require compliance with general vehicle operating rules, which include requiring all vehicles and operators to be licensed for highway driving under Arizona laws and regulations and prohibiting the operation of vehicles in a manner that is reckless, careless, negligent, or likely to cause damage to natural or cultural resources
■ Retain existing permit system	■ Retain a permit system, but implement measures to make the permits easier to obtain	■ Retain a permit system and expand efforts to educate users about natural and cultural resource sensitivities	■ Retain a permit system and expand efforts to educate users about natural and cultural resource sensitivities
■ Issue special recreation use permits, as appropriate	■ Issue special recreation use permits, as appropriate	■ Issue special recreation use permits, as appropriate	■ Issue special recreation use permits, as appropriate
■ Provide the public with up-to-date visitor use maps and rules and regulations ■ Establish an environmental education program	■ Retain existing public education and recreation use information programs, which include BMGR ecology and natural and cultural resource protection information programs	■ Implement increased public education and recreation use information programs, particularly to inform the public about road restrictions and resource sensitivities	■ Implement increased public education and recreation use information programs, particularly to inform the public about road restrictions and resource sensitivities
■ Enforce all public access permits	■ Retain a minimum of two full-time law enforcement positions dedicated to the BMGR	■ Retain a minimum of four full-time law enforcement positions dedicated to the BMGR	■ Retain a minimum of six full-time law enforcement positions dedicated to the BMGR
■ Develop an action plan for interagency law enforcement	■ Retain existing levels of resource protection law enforcement unless a compliance issue arises	■ Develop and implement limits-of-acceptable change monitoring to guide recreation use management and protect natural and cultural resources	■ Develop and implement limits-of-acceptable change monitoring to guide recreation use management and protect natural and cultural resources
■ Develop a BMGR sign plan, implement a signing program based on identified sign needs	■ Retain existing interpretation and signs unless there is a public safety issue	■ Assess requirements for signs or other measures to indicate road restrictions; implement management actions based on findings	■ Assess requirements for signs or other measures to indicate road restrictions; implement management actions based on findings
■ Implement appropriate public safety protection measures	■ Evaluate the feasibility of allowing public entry to mines where such use is compatible with safety and resource protection requirements; if feasible, implement a program for such use under special use permit provisions	■ Prohibit entry to mines	■ Prohibit entry to mines
		■ Develop and maintain recreation use records and statistics Prohibit use of metal detectors	■ Develop and maintain recreation use records and statistics Prohibit use of metal detectors
Rockhounding			
		Proposed Action—Units 2, 3	Proposed Action—Units 1, 4, 5, 6, 7
■ Surface rock removal limited to 24 pounds plus one piece	■ Limit rock removal to no more than 25 pounds ■ Allow surface rockhounding (i.e., no subsurface excavation) for personal (i.e., non-commercial) purposes to occur in any location open to the public as long as no compliance issue arises	■ Limit rock removal to no more than 25 pounds ■ Restrict surface rockhounding for personal (i.e., non-commercial) purposes from special natural/interest and other designated natural and cultural resource areas that are sensitive to impacts arising from human-induced disturbances	■ Prohibit rockhounding
Wood Cutting, Gathering, and Firewood Use, and Collection of Native Plants			
		Proposed Action—Units 2, 3, 4, 5, 6, 7	Proposed Action—Unit 1
■ Prohibit woodcutting or wood collection for commercial or domestic use ■ Permit campfires using dead and downed wood	■ Allow for wood cutting, gathering, and firewood use as long as wood is used at a sustainable rate and no regulatory compliance issue arises	■ Allow using dead and downed wood for campfires ■ Prohibit all other forms of wood cutting or wood collection	■ Prohibit wood cutting, and wood gathering, prohibit native wood campfires
■ Prohibit collection of firewood in redesignated ACECs and other special natural/interest areas	■ Prohibit removal of wood from the range	■ Prohibit removal of wood from the range ■ Monitor native wood supplies in high-use areas; restrict wood collection if resource conditions dictate	■ Prohibit removal of wood from the range
■ Prohibit the collection or salvage of native plants on the BMGR (including plant parts, seeds, or fruit) listed in the Arizona Native Plant Law except in cases where the plants are being salvaged prior to disturbance or for protected Native American purposes; conduct such salvage efforts in compliance with the Arizona Native Plant Law and with appropriate level of coordination with the Arizona Department of Agriculture	■ Prohibit the collection or salvage of native plants on the BMGR (including plant parts, seeds, or fruit) listed in the Arizona Native Plant Law except in cases where the plants are being salvaged prior to disturbance or for protected Native American purposes; conduct such salvage efforts in compliance with the Arizona Native Plant Law and with appropriate level of coordination with the Arizona Department of Agriculture	■ Prohibit the collection or salvage of native plants on the BMGR (including plant parts, seeds, or fruit) listed in the Arizona Native Plant Law except in cases where the plants are being salvaged prior to disturbance or for protected Native American purposes; conduct such salvage efforts in compliance with the Arizona Native Plant Law and with appropriate level of coordination with the Arizona Department of Agriculture	■ Prohibit the collection or salvage of native plants on the BMGR (including plant parts, seeds, or fruit) listed in the Arizona Native Plant Law except in cases where the plants are being salvaged prior to disturbance or for protected Native American purposes; conduct such salvage efforts in compliance with the Arizona Native Plant Law and with appropriate level of coordination with the Arizona Department of Agriculture

TABLE 7
PUBLIC ACCESS AND RECREATION OPPORTUNITIES UNDER THE PROPOSED ACTION AND ALTERNATIVE MANAGEMENT STRATEGIES

Alternative Management Strategy (Proposed Action Highlighted In Gray)			
A	**B**	**C**	**D**
Hunting			
■ Continue existing game management programs	■ Continue existing game management programs ■ Assess the need for a special hunting permit program that requires payment of nominal fees to be used for the protection, conservation, and management of wildlife, including habitat improvement and related activities on the BMGR; implement/manage actions as indicated by the assessment results ■ Evaluate the effects of non-game species collection on wildlife, habitat, and other resources and, if indicated, limit or restrict collection activities within the authority of state law	■ Same as Strategy B	■ Continue existing game management programs ■ Assess the need for a special hunting permit program that requires payment of nominal fees to be used for the protection, conservation, and management of wildlife, including habitat improvement and related activities on the BMGR; implement/manage actions as indicated by the assessment results ■ Petition the Arizona Game and Fish Commission to close the BMGR to non-game species collection
Recreational Shooting			
■ Allow recreational shooting to occur under existing regulations as long as it is compatible with military use and there is no public safety issue	■ Allow recreational shooting to occur under existing regulations as long as it is compatible with military use, public safety, and no significant resource issues are identified	Same as Strategy B plus: ■ Assess importance and character of recreational shooting as an activity/issue to determine the appropriateness of this activity on the BMGR and implement a decision based on the findings ■ Prohibit automatic weapons, except with special use permit ■ Consider designating specific shooting area(s) ■ Prohibit recreational shooting between sunset and sunrise, except with special use permit	■ Prohibit recreational shooting activities (not to include hunting), and assess appropriateness of allowing this activity in designated areas

Proposed Acion and Preferred Alternative

The proposed action, which is also the preferred alternative, is a composite of 17 resource management elements borrowed from Alternative Management Strategies A, B, C, and D. On overall balance, the proposed action is weighted toward resource management elements selected from Alternative Management Strategies C and D (see Table 6). The weighting of the proposed action shows the Core Planning Team's decision to select a blend of resource management elements that would support continued public access and recreation opportunities within the BMGR while also affording increased emphasis on resource conservation, rehabilitation, and protection.

The proposed action would reduce the cumulative length of the overall existing BMGR road network by 658 miles, or 30 percent. These closures, plus designation of some of the roads that would remain available for government use only, would reduce the miles of roads available for general public access by 352 miles, or 36 percent (see Table 8). Most of these closures would be redundant roads concentrated in localized areas while road access to most of the various subregions of the BMGR that are open to the public would be retained (see roads coded in red, green, red-black, and green-black in Figures 11 and 12; roads coded in blue would be closed under the proposed action).

Most of the reduction in available general public access road mileage would occur in BMGR–West where almost 91 percent (or 320 miles) of the decrease would occur. This outcome is not surprising considering the high densities of roads in Management Units 1 and 2 (see Figure 12). The proposed action would close only 32 miles of road currently available for general public access in BMGR–East, which reflects the low existing road densities in Management Unit 6, the principal BMGR–East area that is open to general public access (see Figure 11).

The proposed action would also support constructing two new government use only roads within BMGR–West that would create a vehicle bypass route around the northwest corner of the Cabeza Prieta NWR/Wilderness (see Figure 12). This strategy also would allow the construction of the Yuma ASH as planned.

Assuming that the 658 miles of road to be closed under the proposed action would be revegetated over the long term, many of the smaller unroaded areas (3,000 acres or less) would combine to form larger-sized unroaded

TABLE 8
MILES AND AREA OF ROADS WITHIN THE BMGR UNDER THE PROPOSED ACTION AND EACH ALTERNATIVE MANAGEMENT STRATEGY

Access Status of Roads for Government and Public Access	No-Action Alternative (Alternative Management Strategy A[1])	Alternative Management Strategy B[2]	Proposed Action (Alternative Management Strategy C[3])	Alternative Management Strategy D[4]
1. Miles of road within BMGR—West restricted military use areas that are not open to general public access	**189**	**189**	**134**	**124**
2. Miles of road within BMGR—East restricted military use areas that are not open to general public access	**985**	**985**	**734**	**719**
3. Total miles of roads in BMGR restricted areas (Lines 1+2)	1,174	1,174	868	843
4. Miles of road within BMGR—West outside of restricted areas but restricted to government use only	**63**	**70**	**63**	**48**
5. Miles of road within BMGR—East outside of restricted areas but restricted to government use only	**12**	**12**	**12**	**12**
6. Total miles of roads in BMGR outside of restricted areas but restricted to government use only (Lines 4+5)	75	82	75	60
7. Miles of BMGR—West roads outside of restricted military use areas that are generally open to public access [5]	**767**	**767**	**447**	**383**
8. Miles of BMGR—East roads outside of restricted military use areas that are generally open to public access [5]	**206**	**206**	**174**	**171**
9. Total miles of BMGR roads outside of restricted military use areas that are generally open to public access[5] (Lines 7+8)	973	973	621	554
10. Total miles of roads in BMGR—West of all types (Lines 1+4+7)	1,019	1,026	643	555
11. Total miles of roads in BMGR—East of all types (Lines 2+5+8)	1,203	1,203	920	902
12. Total miles of BMGR roads of all types (Lines 3+6+9)	2,222	2,229	1,564	1,457
Approximate surface area (acres) of all BMGR roads based on a 30-foot road width [6]	**8,080**	**8,105**	**5,687**	**5,298**

1 The no-action alternative includes roads coded as A, C, and D, equivalent to existing network.

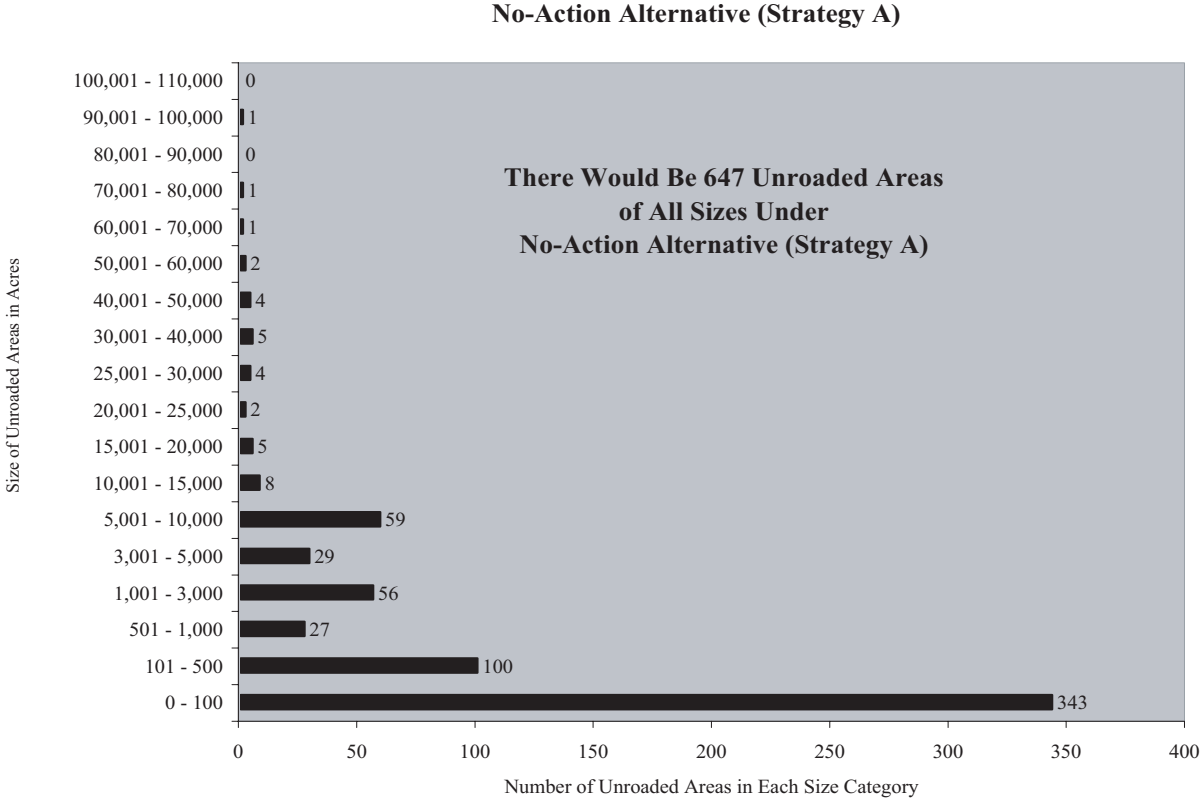
2 Includes roads coded as A, B, C, and D.

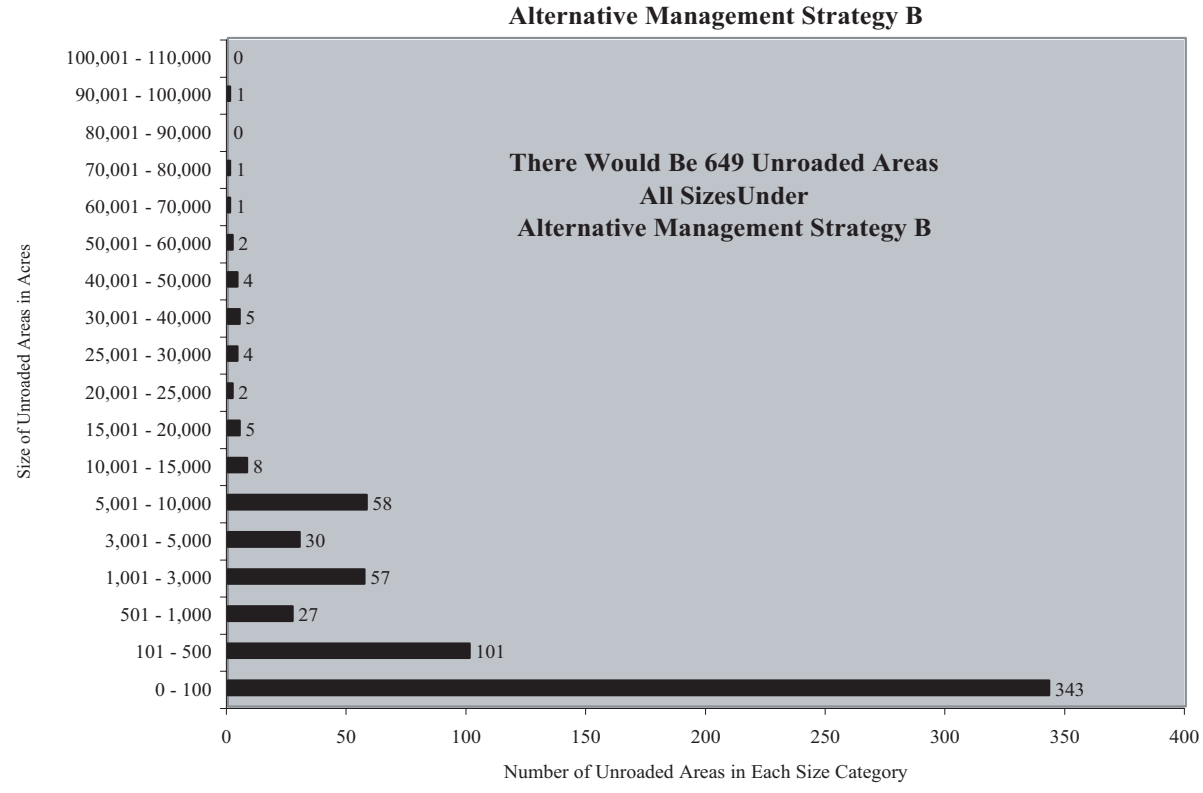
3 Proposed action includes roads coded as C and D; B roads (consisting of the 7 miles of Cabeza Prieta bypass roads) could be added as an authorized future option, but are not included in these figures.

4 Includes roads coded as D.

5 Roads are subject to future temporary or permanent closures for safety, security, or resource protection purposes.

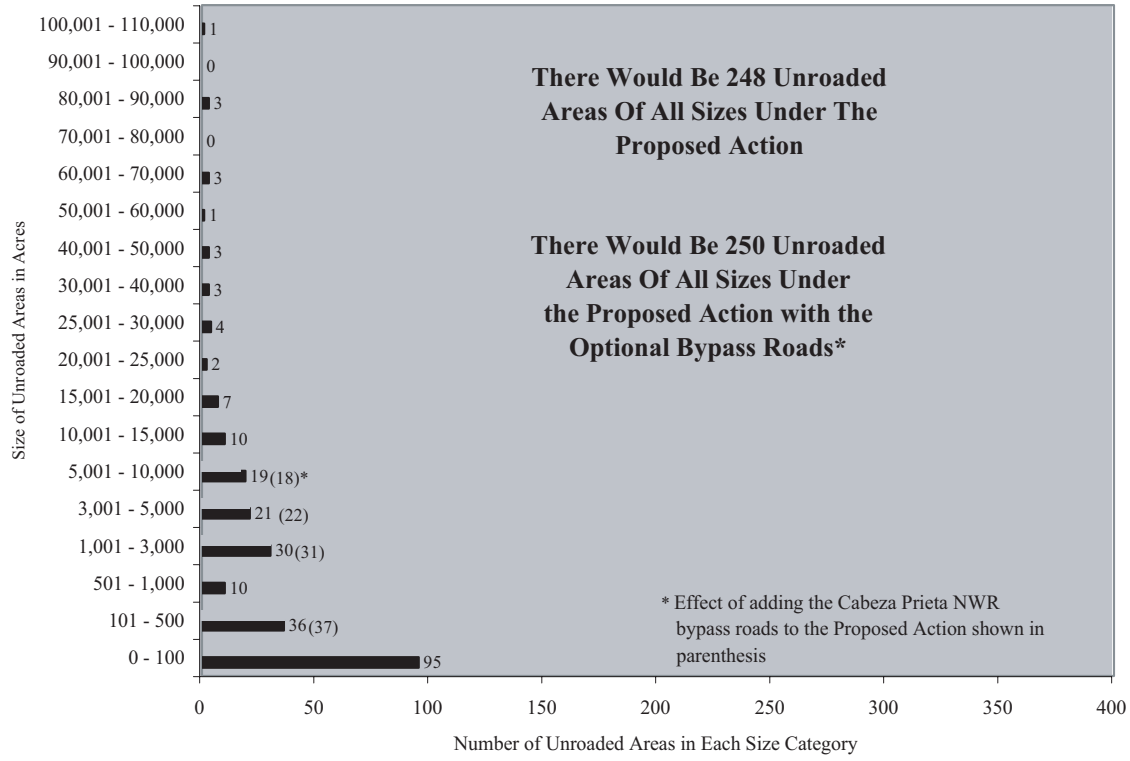
6 Widths of improved and unimproved roadways vary on the BMGR from 6 to 60 feet; 30 feet is a conservative width index that represents a potential upper limit of the aggregate area occupied by roads and associated shoulder areas.



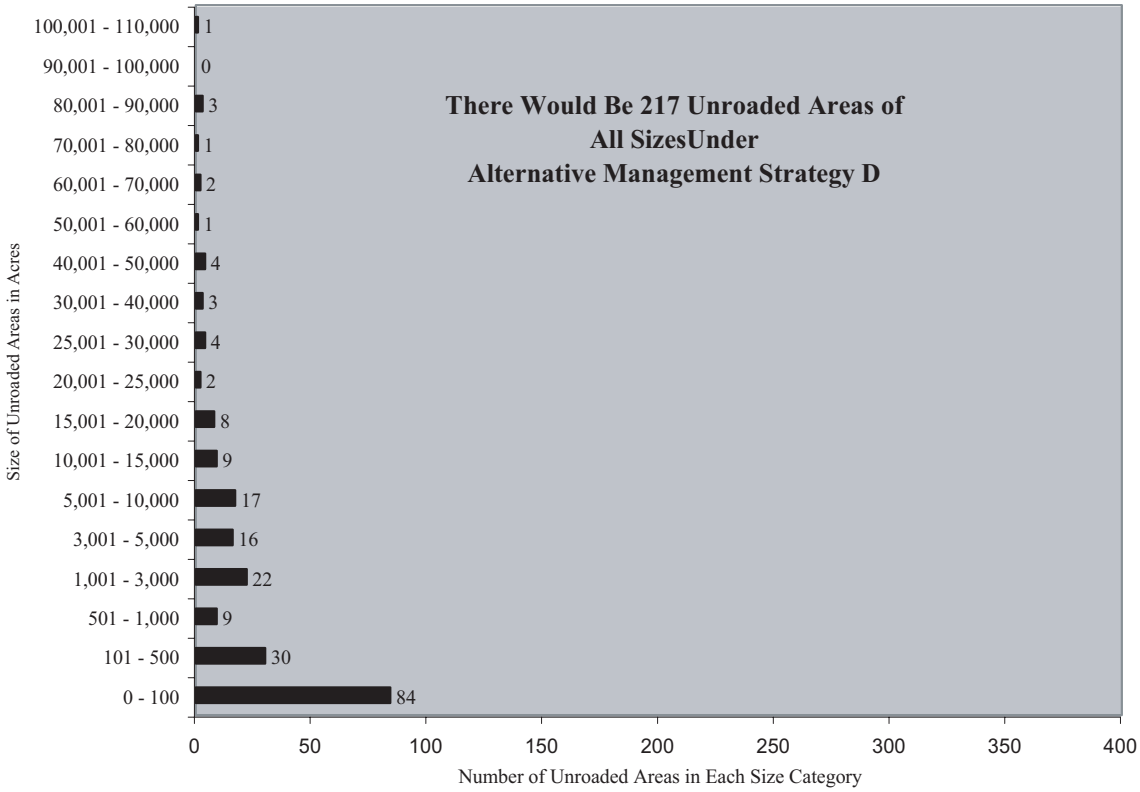


Range-wide Numbers of Unroaded Areas Associated with the Proposed Action and Alternative Management Strategies Figure 13

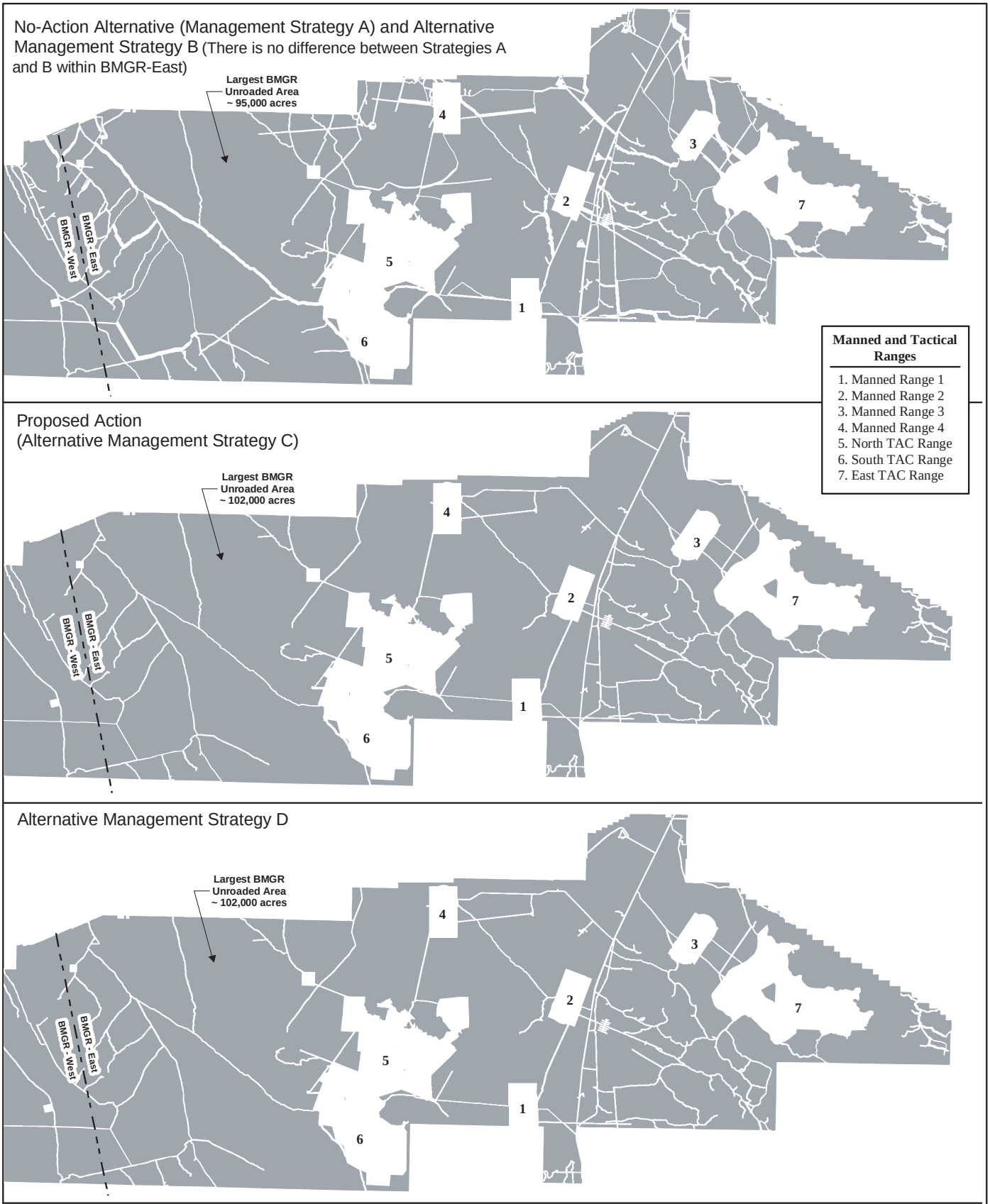
Proposed Action (Alternative Management Strategy C*)



Alternative Management Strategy D



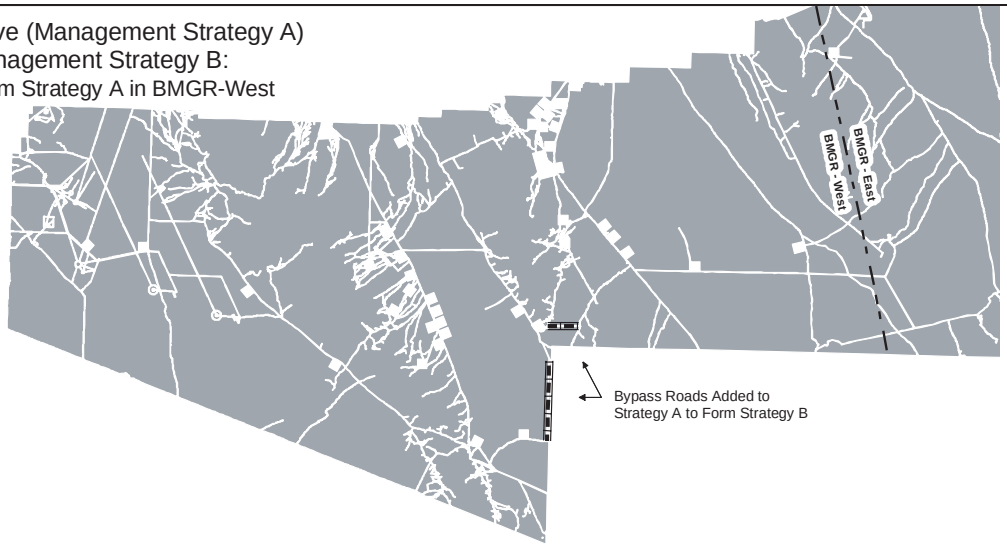
Range-wide Numbers of Unroaded Areas Associated with the Proposed Action and Alternative Management Strategies Figure 13



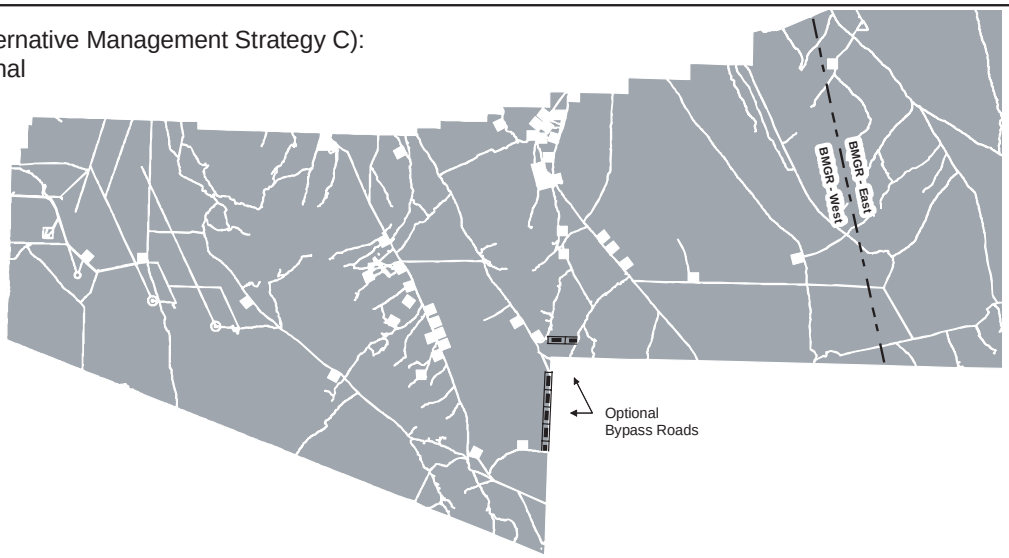
BMGR - East
Unroaded Areas Associated with the Proposed Action and Alternative Management Strategies

Figure 14

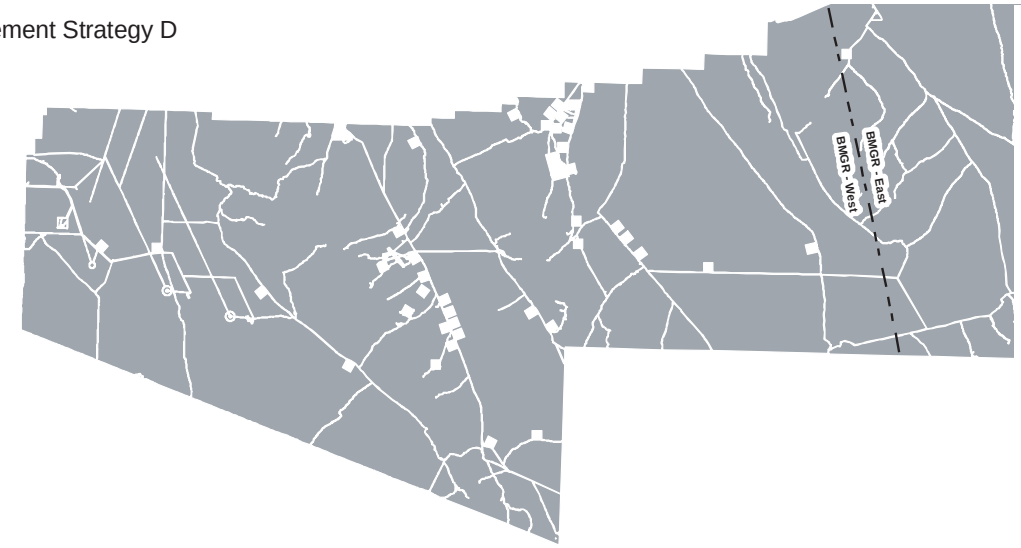
No-Action Alternative (Management Strategy A) and Alternative Management Strategy B:
(Strategy B differs from Strategy A in BMGR-West only in terms of the Cabeza Prieta NWR bypass roads)

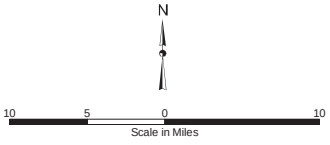


Proposed Action (Alternative Management Strategy C):
Bypass Roads Optional



Alternative Management Strategy D





Unroaded Area
Road Corridor
Active or Inactive Military Training or Support Area Approved for Military Vehicular Use
Cabeza Prieta Wilderness Bypass Road

BMGR - West
Unroaded Areas Associated with the Proposed Action and Alternative Management Strategies
Figure 15

areas (see Figure 13). The largest unroaded area would be slightly more than 102,000 acres located in BMGR–East to the west of North and South TAC ranges (see Figure 14).

Beyond road closures, the proposed action would affect public access and recreation activities in only a few ways that differ from existing conditions (see Table 7). Except in Management Unit 2, the proposed action would limit single parties to no more than 9 vehicles, in contrast to the current limit of 49, unless a special use permit is obtained for an event that requires 10 or more vehicles. In Management Unit 2, a single party could have up to 19 vehicles before needing a special use permit. Because of the presence of buried military munitions, the use of metal detectors would be prohibited everywhere. Another range-wide public safety measure would prohibit recreational entry of historic mines on the range. The use of dead and downed wood for campfires would be allowed under the proposed action except in Management Unit 1 where a long-standing prohibition on firewood collection in the Tinajas Altas Mountains ACEC area would be continued. Recreational shooting would continue to be supported, but the use of automatic weapons and firing at night would be allowed only with a special use permit.

The three ACECs and the Flat-tailed Horned Lizard HMA would be redesignated as special natural/interest areas under the proposed action. With the exception of permitting firewood

Future Road Reuse or Closures

Roads closed under Alternative Management Strategies C and D are intended to remain closed and allowed to revegetate either naturally or with management restoration assistance. However, currently unforeseen circumstances may arise that would require ***reopening*** of a road otherwise closed through implementing the proposed INRMP. Reopening of a closed road to support proposed future military or other government missions generally would require some level of environmental analysis consistent with NEPA and other applicable laws before the reopening action is taken.

Closed road reuse of a temporary and limited nature that falls short of reopening a road also may be necessary to support certain ***time-limited*** management purposes such as resource survey, inventory, or evaluation. Prior coordination with the Air Force, Marine Corps, and other involved agencies, and consideration of requirements under NEPA or other applicable law would occur before a decision to proceed with temporary reuse is approved.

Emergency or other ***time-critical*** circumstances that require reuse of a closed road for public safety, law enforcement, or certain resource management purposes may preclude planning and compliance steps that would customarily precede road reopening or reuse. In these cases, reuse of a road would be pursued only if there is no alternative to resolving the immediate safety, law enforcement, or time-critical resource management need other than through vehicular access. Reuse of a road would also not be pursued unless off-road, cross-country travel is the only other option for vehicular access. Closed road reuse, under these circumstances, would be expected to be limited in both duration and frequency.

The U.S. Border Patrol is the agency with a mission that would be most likely to require temporary reuse of closed roads. The Border Patrol has the multiple responsibilities of deterring undocumented aliens (UDAs) from illegally entering the United States, apprehending UDAs who already have entered the country, and providing search and rescue services when the lives of UDAs or others are threatened by dehydration or other emergencies. The Border Patrol participated in the road planning component for the draft EIS and the roads this agency routinely uses are included in each of the alternative management strategies. The Border Patrol intends to avoid using roads that may be designated as closed through the proposed INRMP implementation process unless other circumstances require the use of these roads to meet this agency's primary law enforcement or life-saving responsibilities. Closed roads would generally be used as the first access priority over off-road, cross-country travel to accomplish time-critical missions.

Other agencies with responsibilities on the BMGR would also maintain emergency road reuse privileges, similar to those of the Border Patrol, for responding to time-critical or emergency circumstances such as aircraft crashes or immediate law-enforcement, security, or public safety situations. Some emerging resource management activities-such as wildfire suppression or threatened or endangered species protection-may warrant time-critical road reuse. These privileges would not be invoked to support unplanned, unforeseen, but otherwise non-time-critical activities. Coordination with the range management offices of the Air Force or Marine Corps would precede the closed road reuse to the extent compatible with the requirements of the time-critical action. In any event, the appropriate Air Force or Marine Corps range management office would be notified of the road reuse action and the need for such action as soon as possible following the event.

In contrast to future reuse of closed roads, roads left open through implementation of the proposed INRMP could be ***closed*** to all users or just public access at some point in the future as a result of either INRMP update planning or for currently unforeseen resource protection requirements. For example, a currently unforeseen need could arise to protect cultural or sensitive natural resources at a particular site from damage associated with road use. Road closures, however, would be only one of the possible management measures that would be assessed to meet these types of protection requirements. The outcomes of decisions on road reuse or closures that occur after the proposed INRMP is implemented cannot be predicted at this time.

gathering in the Mohawk Mountains and Sand Dunes ACEC, the three ACECs would be managed much the same as under the Goldwater Amendment. Management provisions specific to these areas may be implemented in the future if monitoring indicates a need for new resource protection measures. The redesignated HMA would continue to be managed according to the cooperative agreement that established this area. Additional special natural/interest areas may be established if needed to better manage special biological, geologic, scenic, cultural, or other resource areas.

The proposed action would emphasize monitoring and survey as resource management tools. Principal planned monitoring and survey activities would include (1) using a limits of acceptable change monitoring system to track key indicators of the effects of ongoing recreation use, such as off-road driving and firewood depletion; (2) monitoring ecosystem trends that indicate the overall diversity and health of the range ecosystem; and (3) conducting vegetation and wildlife surveys for selected species and natural communities and using the results to update resource maps and databases.

In addition to continuing most existing wildlife and habitat management programs, the proposed action would emphasize controlling trespass livestock and feral burros, conserving natural communities and ecosystem functions, identifying and controlling invasive species, and restoring habitat in areas that have been damaged by discontinued military activities or non-military use. The wildlife waters management program on the BMGR would be specifically reassessed. During the first five years following implementation of the proposed INRMP, the proposed action would allow up to six high-priority wildlife water development projects to be implemented and would support the continued maintenance and repair of existing water developments. At the same time, the wildlife management agencies on the BMGR would conduct a thorough review of the beneficial and adverse effects of wildlife waters by consulting the scientific literature on the subject and, as indicated, sponsoring specific field studies. These agencies would establish an expert panel to review the available findings and make recommendations by the first five-year review of the INRMP on the future development, maintenance, suspension, and/or removal of wildlife waters on the range. The panel would also indicate whether additional studies on the role of water developments as a wildlife management tool are needed.

Alternative Management Strategy B

In contrast to the other alternatives, Strategy B would potentially support expanded motorized access to the BMGR and would support the most liberal public use policies (see Table 7). For example, Strategy B would allow for driving in designated dry washes and vehicle-based camping within 100 feet of public use roads. It would also potentially allow for the establishment of designated off-road vehicle use areas and public entry to designated mines. However, all motorized access and recreation use would have to remain compatible with the military mission and the maintenance of a functioning natural ecosystem. Strategy B would keep the entire existing road network open for vehicular use. Strategy B would also allow for the potential development of additional roads on a case-by-case basis, but the only proposed difference between Alternative Management Strategies A and B is that Strategy B would authorize planning for the two new Cabeza Prieta NWR/ Wilderness bypass roads totaling approximately 7 miles. Unroaded areas and unroaded area management would be the same as described for Strategy A, with the exception of areas bisected by these bypass roads and any future roads.

Alternative Management Strategy B would provide for the application of resource protection and conservation measures, but its focus would be on resource-specific monitoring, targeted wildlife management actions (such as continued development and maintenance of wildlife waters), and basic compliance with regulatory requirements. In most other ways, Strategy B is very similar to Strategy A, the no-action alternative. The key remaining difference is that Strategy B would allow the existing special management area designations for ACECs, SRMAs, and the backcountry byway to expire in favor of managing these areas in the same manner as other BMGR locations.

Alternative Management Strategy C

Alternative Management Strategy C is similar to the proposed action because many of the resource management elements of Strategy C were incorporated in the proposed action. Strategy C

represents all of the public access and recreation management elements of the proposed action except that Strategy C would: (1) set the single party vehicle limit without a special use permit at 19 vehicles range-wide compared to the proposed action, which would set this limit at 9 vehicles in Management Units 1, 3, 4, 5, 6, and 7, and 19 vehicles in Management Unit 2; (2) permit recreational rockhounding where the range is open to public access, whereas the proposed action would limit this activity to Management Units 2 and 3; and (3) permit the use of dead and downed wood for campfires throughout the range, whereas the proposed action would prohibit this activity in Management Unit 1 (see Table 7). Strategy C would also promote the use of dust, palliatives to control fugitive dust, while the proposed action would use best management practices to control nonpoint source pollution and the use of dust palliatives would be optional. Visual resource management criteria would be established and applied to new projects on the BMGR, whereas under the proposed action visual resource impacts of new projects would limited to NEPA-based requirements.

Alternative Management Strategy D

Alternative Management Strategy D represents the opposite end of the spectrum from Strategies A and B by proposing the most limits on motorized access and public use activities, no Cabeza Prieta NWR/Wilderness bypass roads, conservation of unroaded blocks of land of 3,000 acres or more, and the greatest emphasis on adaptive management methods that incorporate feedback from ecosystem monitoring. The development of new permanent wildlife waters would be immediately suspended under this strategy pending the outcome of a detailed review of the beneficial and adverse effects of water developments on the BMGR. New permanent waters may be developed in the future if the results of this review indicate that beneficial effects outweigh adverse outcomes. Maintenance and repair of existing waters would continue pending the findings of the review.

Alternative Management Strategy D would reduce the total inventory of active roads by 765 miles to 1,457 miles, which would be about 34 percent less than the existing network (see Figures 11 and 12). Under Strategy D, 554 miles of roads would be available for general public access, which is about 43 percent less than that available under existing conditions with most of the reduction occurring in BMGR–West (see Table 8). There would be little difference in the effects of Alternative Management Strategy D and the proposed action on the road mileage available for general public access in BMGR—East. Strategy D would close 35 miles of public access roads in BMGR—East compared to 32 miles under the proposed action. This strategy would not allow for the construction of the Yuma ASH as planned.

With revegetation of closed roadbeds occurring over time, the number of unroaded areas in the BMGR of 3,000 acres or less would be reduced from 526 to 145 by Strategy D, a reduction of about 72 percent (see Figures 13, 14, and 15). Under Strategy D, there would be eight unroaded areas of more than 50,000 acres, with the largest unroaded area consisting of about 102,000 acres in BMGR—East.

How the Proposed Action and Alternative Management Strategies Would Affect the BMGR Environment

Scope of the Draft EIS Analysis and this Community Report Summary

The draft EIS for the proposed INRMP analyzes in detail how the proposed action and alternative management strategies may affect the BMGR environment. This analysis examines three levels of potential environmental impact resulting from the proposed action or alternatives. In accordance with the NEPA, these levels include (1) the individual impacts of each of the 17 resource management elements of each alternative on each of 20 separate environmental resource categories, (2) the aggregate effect of all 17 management elements of each alternative on the BMGR environment, and (3) the cumulative effects on the BMGR environment when each alternative (including the proposed action) is considered, in turn, together with all past, present, and reasonably foreseeable other actions. The 20 separate resource categories for which environmental impacts are assessed include the following:

- earth resources
- water resources
- climate and air resources
- vegetation
- wildlife and wildlife habitat
- protected species
- wildfire management
- grounds maintenance
- public utility and transportation corridors
- special management areas
- outdoor recreation
- public health and safety
- law enforcement
- transboundary and domestic perimeter land use
- cultural resources
- visual resources
- hazardous materials and waste
- socioeconomics
- noise
- environmental justice

The summary of the potential environmental effects of the proposed action and alternatives provided in this Community Report is limited to the aggregate effects of each proposed INRMP alternative and to the cumulative effects of each alternative together with other past, present, and reasonably foreseeable future actions. For summary purposes, the 20 resource categories evaluated in the draft EIS were sometimes combined, as appropriate, into the 14 categories that appear in the following discussion of potential environmental consequences.

Earth, Water, and Air Resources

Proposed Action

The majority of the 17 resource management elements that constitute the proposed action include one or more management objectives that would reduce or limit activities that potentially could cause physical disturbance of the ground surface. Such management actions, some of which are a continuation of existing policy and some of which are new policies, would have benefits for soil, water, and air resources from any associated decrease in physical disturbance. As compared to existing levels of physical disturbance, the aggregate level of beneficial effect on these resources is expected to be low on a range-wide basis, with moderate benefits potentially occurring in localized areas.

Elimination of wildcat off-road vehicle trails, that in turn become roads, is a priority resource conservation and protection objective within the BMGR.

While the patterns and levels of surface disturbance from these activities would generally continue within the same use areas, there would be some areas where sources of physical disturbance would be reduced or eliminated as the result of the combined effects of the proposed action. For example, with the estimated 30 percent or 658 miles of road to be closed, there would not only be benefits from the discontinued use and recovery of the roadway, but also from the elimination of additional physical disturbance that may have occurred in association with the road, such as from vehicle-based roadside camping. Because most of the resource elements address various aspects of public access and use, such an additive effect would be most expected in association with the closure of public use roads, which would decrease by about 36 percent (from 973 miles to 621 miles; see Table 8).

There are specific objectives that, together with the proposed road closures, would have greater potential than existing programs for reducing potential impacts on earth, water, and air resources throughout publicly accessible portions of the range. These include various proposed camping and visitor stay limits objectives (i.e., restricting camping in certain areas for resource protection purposes) and recreation services and use supervision objectives (i.e., prohibiting off-road vehicle (ORV) travel and on- and off-road racing, requiring special use permits for some activities, establishing rules for waste disposal, expanding public education and recreation use information programs, and retaining minimum numbers of law enforcement personnel). Some related benefits might occur range-wide, while others might occur in site-specific locations. Nearly all of the roads to be closed and the predominance of all public uses on the BMGR

occur in areas located within the broad alluvial valleys. In these areas, soils characteristically belong to soil associations that have slight to moderate water erosion hazard potential and moderate to severe wind erosion hazard potential with regard to the soil's susceptibility to accelerated erosion when disturbed. Due to low annual rainfall amounts and little slope in these valley areas, there is increased potential for beneficial effects to soils where roads to be closed are in areas with greater wind erosion hazard potential.

Minor changes in the types and extent of impacts on earth, water, and air resources could also result from the displacement of some types of public use activities from areas where they would be prohibited to areas where they that would be available for such use. This includes the potential establishment of designated areas for camping and recreational shooting (following the proposed further evaluation of these activities).

The proposed action would allow the construction of the Yuma ASH as planned, which could have site-specific impacts on earth, water, and air resources. However, the new transportation/utility corridors policy potentially would be more protective of these resources on a range-wide basis than the existing policy because no additional corridors could be established on the BMGR. Under current policy, new corridor alignments beyond the Yuma ASH would be possible.

Important aspects of the proposed management objectives for resource inventory and monitoring, resource management, and coordinated regional planning that would have the greatest potential for indirect impacts on earth, water, and air resources are those objectives within the soil and water resources and air resources categories, which essentially define the resource management goals for these resources. In addition, some objectives related to resource inventory and monitoring, designating four special natural/interest areas (the HMA and three former ACECs), unroaded area management, general vegetation and wildlife habitat management, wildfire management, and perimeter land use, encroachment, and regional planning potentially would work together to provide a more comprehensive program for earth, water, and air resource protection. Not redesignating the SRMAs as special natural/interest areas would represent the effective end to a legacy of recognition of the outstanding geology for which they were previously recognized, first as part of the State Natural Area program and as carried forward in the Goldwater Amendment. The development and implementation of a limits-of-acceptable change monitoring system to guide recreation use management and protect natural and cultural resources could benefit earth, water, and air resources by identifying where recreation use is potentially affecting these resources and using adaptive management techniques to address these effects. To the extent that the proposed management programs are more effective than existing programs, such management programs potentially could be more beneficial to earth, water, and air resources than existing management programs.

Alternative Management Strategy B

Management Strategy B potentially would be less beneficial for earth, water, and air resources, in aggregate, than the proposed action. Strategy B would not reduce or limit activities that can cause physical disturbance to the extent of the proposed action. Strategy B also includes some objectives that could result in greater levels of physical disturbance than either the proposed action or the existing conditions. The greatest single difference of this strategy would be the lack of existing road closures and the potential for developing additional roads and increasing road use. There would be at least an estimated 2,229 miles of roads, which is about 60 percent more than what would remain after road closures that would occur under the proposed action (see Table 8). Roads open to general public access would remain unchanged.

The physical disturbance of the roads themselves and associated uses in public use areas may be in excess of current levels because vehicles would be allowed to park up to 100 feet, rather than the existing 50 feet, from roads for camping; there would be fewer restrictions on other types of uses (e.g., camping stay periods; wood cutting, gathering, and use; recreational shooting; rockhounding; and transportation and utility corridor development) and less extensive recreation services and use supervision measures as compared to both the proposed action and current conditions. Following further evaluation, ORV use areas could be designated for public use, which potentially would have moderate localized adverse impacts on earth, water, and

air resources and public entry to designated mines, which could have minor localized impacts on earth resources. Unlike the proposed action, there would not be the potential for physical disturbance from recreational shooting or camping potentially being shifted from widely dispersed to localized areas.

In contrast to the proposed action, Strategy B would not expand on resource inventory and monitoring or coordinated regional planning, but would instead add to the existing management provisions only as needed to comply with statutory requirements and to prevent erosion in areas of cultural resource sensitivity. Not redesignating the SRMAs as special natural/interest areas would have the same effect as the proposed action, the end to a legacy of special recognition of the geology of these areas. Instead of continuing existing management objectives for air resources, no special management objectives would be prescribed. As compared to the proposed action, there would be fewer aggregate beneficial impacts to earth, water, and air resources from continuation or changes in management through improved inventory, monitoring, and/or adaptive management.

Alternative Management Strategy C

There would be few differences between the potential aggregate effects on earth, water, and air resources from the implementation of Strategy C and the proposed action. A few management objectives could result in greater physical disturbance, as compared to the proposed action, although these would be minor even in aggregate. These include allowing more vehicles in a single party in most management units, having fewer law enforcement officers to monitor public use, and allowing rockhounding and also wood collection and native wood campfires throughout the range.

With this strategy, some resource management elements may be less protective of earth, water, and air resources than the proposed action. Resource inventory and monitoring and perimeter land use and regional planning objectives would be somewhat less comprehensive, in that Strategy C does not include ecosystem-wide efforts or coordination on some off-range issues (such as pesticide drift and groundwater management) that are included in the proposed action. In addition, there would be less protective objectives with regard to soil and water resources management, including that there would be no prescribed range-wide soil survey. However, Strategy C does include additional management objectives for visual and air resources beyond the proposed action, including the use of dust palliatives on heavily traveled roads, which could have minor beneficial air quality impacts in localized areas as compared to the proposed action.

Alternative Management Strategy D

Impacts on earth, water, and air resources from Strategy D would differ from the proposed action mainly in that there would be slightly less physical surface disturbance expected under Strategy D because there would be more management objectives that would reduce surface disturbance. Strategy D would close 107 more miles of road than the proposed action, including 67 more miles of roads generally open to public access (see Table 8). Rockhounding, recreational shooting, and non-game species collection, which could cause minor disturbance in localized areas, would continue to be allowed on a limited basis under the proposed action, but potentially would be prohibited under this strategy (although the appropriateness of designated recreational shooting areas would be assessed and coordination with the Arizona Game and Fish Commission would be needed to close the BMGR to non-game species collection). No new transportation/utility corridors would be established, including the Yuma ASH, which would eliminate the potential for introducing associated surface disturbance, construction-related dust, and vehicular emissions. Other distinctions between the proposed action and Strategy D with regard to restrictions/limitations on types of use that could cause physical disturbance are minimal (i.e., native wood campfires would be prohibited range-wide, a special use permit would be required for camping stays exceeding seven consecutive days).

While many of the resource inventory and monitoring and management measures under Strategy D would be similar to the proposed action, there are a few objectives that could have a greater potential to benefit earth, water, and air resources as compared to the proposed action. Some closed roads potentially would be actively restored where feasible. Although the conservation of unroaded areas greater than 3,000 acres

in size would be the same, the additional road closures would increase the size of some unroaded areas. Three additional special natural/interest areas (the two SRMAs and the Backcountry Byway) would be designated, thus retaining special designations for all seven special management areas established by the Goldwater Amendment, including continued recognition of the geological significance of the SRMAs. Air and visual resource management objectives would be more comprehensive, including potentially using dust palliatives on heavily traveled routes and monitoring air quality trends.

Alternative Management Strategy A (No-Action Alternative)

The no-action alternative (Strategy A) would result in cumulative surface disturbance and associated range-wide minor impacts on earth, water, and air resources that potentially would be greater than under the proposed action. However, the aggregate difference in magnitude of effects of the no-action alternative versus the proposed action on these resources is difficult to assess because Strategy A would include the eventual future development of a transportation plan; however, the potential extent of future road closures is unknown. In the near term, this strategy would not have any of the potential benefits of the proposed action on these resources in terms of road closures, but as the transportation plan is developed and implemented, roads likely would be reduced to some extent and at least some similar benefits would be likely. Rather than further restricting/limiting other types of public use that cause physical disturbance (e.g., vehicle-based camping, rockhounding, and recreational shooting) or expanding recreation services and use supervision provisions, existing limitations/restrictions would be retained. Consequently, together and on a range-wide basis, fewer minor benefits may occur for earth, water, and air resources than with the proposed action.

Continued management under existing guidance would have less potential for beneficial effects in terms of resource inventory and monitoring and management. Strategy A lacks objectives that could provide for additional reduction of erosion and would not include a range-wide soil survey. The current (but expired) seven special management areas would be redesignated, rather than four as proposed; however, the effect of retaining of applicable management provisions would be similar as compared to implementing the management objectives associated with the proposed action, even without the special designations. Objectives for unroaded area conservation and perimeter land use, encroachment, and regional planning would be nonexistent. Existing management programs are regarded as beneficial to earth, water, and air resources, but the management objectives included in the proposed action potentially could be more beneficial.

Biological Resources Including Protected Species

Proposed Action

The aggregate effects of the proposed action potentially would be more beneficial to biological resources as compared to the existing conditions. The proposed action would extend the benefits of existing management programs to include additional measures further controlling some types of public access and uses of the BMGR that potentially could reduce minor impacts on biological resources on a range-wide basis and reduce moderate impacts in localized areas. It would also introduce a new resource monitoring and adaptive management approach and new management objectives for some resource elements that could have low to moderate benefits on biological resources.

The additive impacts of reducing redundant road networks and any associated activity (such as roadside vehicle-based camping) and continuation or introduction of other restrictions or limitations on public access and uses for other activities (including camping, wood gathering, waste disposal, and recreational shooting) potentially would benefit biological resources within the affected areas. Depending on the plant communities, wildlife habitat, and wildlife occurring within these site-specific areas, benefits could be low to moderate. For federally protected species and/or state listed species, these benefits would vary depending on the distribution of the individual species relative to the specific areas affected by the proposed road closures or other access limitations. Because proliferation of roads and associated disturbance has been most pronounced within the valley areas and camping most frequently occurs in valleys, the biological resources in these areas would have the greatest potential for benefit.

Of the 658 miles of roads that would be closed range-wide with the proposed action, about 84 percent or roughly 550 miles of roads would be closed within the creosotebush-bursage desertscrub natural community (a 30 percent decrease in all BMGR roads within this natural community). When translated into the upper limit surface area estimate for road bed and shoulder effects areas, the area occupied by roads within this natural community would be reduced from about 6,540 acres to 4,540 acres within the estimated 1.29-million-acre area occupied by this natural community range-wide. In addition, the proposed action would lead to a closure of about half of the roads (about 55 of the about 105 miles) within the Elephant Tree Limberbush on Xeric Rocky Slopes natural community type (a 52 percent decrease). Range-wide, this natural community occupies 90,600 acres of the BMGR and the upper limit of the surface area occupied by existing roads is estimated at 380 acres; the proposed action would reduce this to about 205 acres. Although this may be viewed as a small impact in these terms, there may be moderate benefits in these areas due to the fact that the BMGR and Cabeza Prieta NWR contain the only representations of this natural community in the United States. Other natural communities potentially would benefit as well, but not to the same extent as these two natural communities. The approximately 7-mile Cabeza Prieta NWR bypass roads, if implemented, would have localized adverse effects on vegetation and wildlife habitat, primarily within the creosotebush-bursage desertscrub natural community.

Wildlife within affected habitats would benefit in localized areas where habitats are restored and intermittent road associated noise and activities become less prevalent. Examples of common wildlife species that may benefit include coyote, rodents, Le Conte's thrasher, and kit fox. Federally protected and/or state listed species that also may benefit from road closures include Sonoran pronghorn, flat-tailed horned lizard, desert tortoise, lesser long nosed bat, and California leaf-nosed bat. An estimated 125 miles of road within the current range of the federally endangered Sonoran pronghorn would be closed and an estimated 67 miles of road would be closed in habitat of the flat-tailed horned lizard, which is proposed for federal listing as a threatened species. On a range-wide basis, the magnitude of the collected beneficial effects on biological resources is expected to be low, although moderate benefits may be realized in localized areas.

The USFWS has determined that listing the flat-tailed horned lizard as a threatened species is not warranted, in part because of the protection afforded by the HMA for this species witihn the BMGR.

Conversely, effects associated with roads could become more pronounced along the roads that would remain open as such uses and associated disturbance (e.g., vehicle use, noise, human activity) could become more concentrated. Under the proposed action, 621 miles of roads would be available for general public access, which is 352 miles or 36 percent less than is currently available under the existing condition. Likewise, the potential establishment of designated areas for camping and recreational shooting could shift any impacts that currently may be occurring on biological resources from dispersed locations to localized areas. However, given the low levels of recreational use of the BMGR, any such impacts would be expected to be minor, even in aggregate.

Certain other restrictions or limitations on public, military, and/or agency use could also reduce or eliminate effects on biological resources that may be occurring as a result of these activities. Some of these restrictions would be continuations of existing policy, some would be part of the proposed action, and some could be imposed after further assessments that would be conducted as part of the proposed action. Elements of the proposed action that would restrict or limit use that may have beneficial effects on biological resources include the following:

- The collection or salvage of native plants on the BMGR listed in the Arizona Native Plant Law would continue to be prohibited. Plants that are vulnerable to salvage or harvest would be expected to continue to benefit from this provision.

- Wood cutting and removal of wood from the range would continue to be prohibited range-wide. Wood gathering and native wood fires would be prohibited in Management Unit 1 and, in high-use areas of the range, wood supplies would be monitored and restrictions implemented if resource conditions dictate. This would benefit woody vegetation (including blue paloverde, ironwood, and honey mesquite) and small mammals, reptiles, and avian species that may use these wood resources.

- Off-road driving and on- and off-road racing would continue to be prohibited. Policies that direct government projects or other concentrated use toward already disturbed and impacted land areas and restrict the operation of motorized vehicles and heavy equipment to established roads and previously impacted areas (except when related to a specific permitted project) would remain in place. Motorized travel in washes would continue to be restricted to where the wash is a designated part of the road system open to the public or government use and is dry. This would be of continued benefit to wildlife and wildlife habitat because these activities may cause habitat degradation, direct injuries, or mortalities to wildlife, and indirect disturbance of wildlife from noise or other effects.

- Vehicle-based camping would continue to be restricted under existing terms (i.e., 14 consecutive days within a 28-day period except by special use permit, within 50 feet of most existing roads designated as open to public use, 1/4 mile from wildlife waters), and new restrictions on camping potentially would be implemented along certain road segments and within 1/4-mile of other designated natural and cultural resources that are sensitive to impacts arising from human-induced disturbances. Under these management objectives, camping would be expected generally to continue to affect vegetation at low levels and in a dispersed fashion as vegetation is disturbed by vehicles and people at and near campsites, particularly from vehicle-based roadside camping. Sensitive biological resources (e.g., biological soil crusts, protected plants, bighorn sheep lambing areas, terrestrial migratory corridors) potentially could benefit if they occur in areas that are designated as areas where restrictions on camping would be implemented.

- Prohibiting entry to mines would protect species that use these resources (some mines are used as roosting sites for bats, some mine shafts and adits provide shelter for bighorn sheep and other species, and they support a unique microhabitats for other species).

- Developing procedures to control trespass livestock and feral burros would reduce the potential for degradation of vegetative communities and habitat quality.

- Surface rockhounding for personal (i.e., non-commercial) purposes would be restricted from special natural/interest areas, Management Unit 1 and Units 4 through 7, and other designated natural and cultural resource areas that are sensitive to impacts arising from human-induced disturbances. At current levels, rockhounding is not thought to be associated with any measurable effects on general vegetation, wildlife, wildlife habitats, or protected species. However, this measure would protect biological resources from any minor effects that may be occurring in localized areas (e.g., lichens, microhabitats).

The proposed action would assess the value of recreational shooting opportunities on the BMGR and the value of establishing designated shooting areas and camping areas. The results of these evaluations could have other potential impacts to biological resources. Both of these would have the potential to shift any impacts occurring in a dispersed fashion to a localized area, where the impacts would have the potential to be more intense. Given that adequate protection of biological resources including protected species would be considered in designating such areas, this potential shift is regarded as neither positive nor negative, but rather as a potential shift in the type and intensity of impact.

The effects of non-game species collection on wildlife, habitat, and other resources would be evaluated and, if indicated, limitations or restric-

tions of collection activities within the authority of state law could be implemented. Any affected non-game species (potentially, various species of lizards, snakes, and desert tortoise) could benefit.

Potential adverse impacts on biological resources, including protected species, could also occur as the result of disturbance associated with any site-specific actions (e.g., designating camping or shooting areas, creating the Cabeza Prieta NWR bypass roads, etc.) that are addressed here at a programmatic level. These effects are not expected to be substantial, but would be analyzed in detail separately and mitigated, as appropriate.

New wildlife water developments would be limited to six high-priority developments in the first five years of the INRMP. Concurrently, literature research and studies would be conducted to further identify the potential benefits and adverse effects of wildlife water developments on a broad range of biological resources; future developments would be dependent upon the findings. Of the 17 developments proposed in the HMPs that have not yet been implemented, 14 are primarily for the benefit of desert bighorn sheep, two are primarily for the benefit of mule deer, and one is primarily for the benefit of Sonoran pronghorn. Potential adverse effects on biological resources from this approach are difficult to forecast as there is a lack of definitive scientific work on this issue. However, the preponderance of current scientific evidence indicates that wildlife water developments in the southwestern United States have not had a demonstrated negative impact on native flora and fauna, and that certain wildlife species have clearly benefited from increased availability of free-standing water, including each of the species targeted in the HMPs as well as non-targeted mammalian predators, small mammals (including bats), game and non-game birds, and herpetofauna.

The other overall potential result of the proposed action on biological resources pertains to resource management impacts. As a result of the proposed action, biological resources would be considered in a broader, regional context, and a more adaptive ecosystem management approach would be taken towards stewardship. Various species could benefit from developing a limits of acceptable change resource monitoring and more adaptive, ecosystem management approach if this approach resulted in greater identification and understanding of impacts on vegetation, wildlife and wildlife habitats, and protected species and effective management actions were taken to lessen or eliminate such impacts. Other specific management objectives that could benefit biological resources include the following:

Wildlife waters, both natural and human-made, influence the distribution of many wildlife species.

- restoring damaged environments where intensive use has been discontinued
- restricting utility/transportation corridor development to the development of the Yuma ASH and limited development of the State Route 85/railroad corridor
- redesignating the expired ACECs as special natural/interest areas (and maintaining existing or establishing additional special management provisions, as needed)
- monitoring, surveying, and mapping efforts to provide reliable and up-to-date scientific information about the status of resources and their response to ongoing military and civilian use of the BMGR
- managing invasive plant species
- developing a range-wide fire management plan
- increasing perimeter land use, encroachment, and regional planning efforts

Each of these actions, when viewed in concert with the other beneficial effects on biological resources related to access and use, potentially would result in greater combined long-term benefits for and lead to a more scientifically based approach toward management of BMGR biological resources, including protected species.

Alternative Management Strategy B

If Management Strategy B were implemented range-wide, there would be fewer potential aggregate beneficial effects and greater potential aggregate negative effects on biological resources as compared to the proposed action. The range-wide magnitude of these aggregate effects would likely be low, although moderate effects could potentially occurring in localized areas.

Most of the existing management provisions would be continued and many of the same benefits to biological resources predicted for the proposed action would occur under this strategy as well. However, the overall strategy would be generally less protective in that natural resource management would be limited to those measures necessary to achieve basic regulatory compliance; existing motorized public access would be maintained; there would be no special management areas; and a wider range of recreational opportunities would be supported as compared to the proposed action. Some provisions of Strategy B that have potential for greater adverse effects on biological resources as compared to the proposed action include the following:

- retaining the existing 2,222-mile road network, plus potentially implementing the 7-mile Cabeza Prieta NWR bypass roads, possibly allowing ORV use in designated areas, and potentially allowing future motorized access to currently restricted areas
- evaluating the potential for building additional roads
- allowing vehicle-based camping to occur within 100 feet of existing publicly accessible roads instead of 50 feet
- evaluating the feasibility of allowing public entry to mines where such use is compatible with safety and resource protection requirements
- evaluating proposals to develop additional utility/transportation corridors

Collectively, the magnitude of such adverse effects on biological resources including protected species likely would be minor on a range-wide basis, but could be slightly more pronounced in localized areas.

Along with this suite of potential adverse effects, Strategy B would have some of the same potential for positive effects as the proposed action (e.g., controlling trespass grazing; surveying for and controlling invasive species; implementing restoration efforts in areas damaged by past military, agency, or intensive public use; conducting surveys of special status species; implementing habitat improvements in support of endangered species recovery plans; and developing a sound range-wide fire management plan). As with the aggregate negative impacts, the collective magnitude of such beneficial effects on biological resources including protected species likely would be minor on a range-wide basis, but could be slightly more pronounced in localized areas.

This strategy would not, however, include other potentially beneficial natural and biological resource management elements of the proposed action including monitoring ecological recovery and trends in high and low use areas; expanding public education programs; developing a limits of acceptable change ecosystem monitoring system and adaptive monitoring program within the context of the greater Sonoran Desert Ecoregion; identifying key areas (e.g., pronghorn concentration areas, fawning grounds, and wildlife corridors) and implementing restrictions needed to protect and conserve them and their habitat; and assessing the importance and character of recreational shooting as an activity/issue to determine the appropriateness of this activity on the BMGR and implement a decision based on the findings. The former ACECs, SRMAs, and the Backcountry Byway would not be redesignated as special/natural interest areas and would be managed without special provisions.

One of the biggest differences between Strategy B and the proposed action in terms of biological resources concerns the approach to wildlife water developments. Unlike the proposed action, Strategy B would authorize the implementation of all 17 wildlife water developments prescribed by the previous HMPs without limitations or pause for a review of the literature or additional studies that would assess their potential benefits and adverse effects. Also unlike the proposed action, Strategy B would not provide for studies and evaluations of wildlife waters. thus, Strategy B would not lead to new information that may foster improvements in wildlife water management. On these terms, Strategy B may be less beneficial than the proposed action.

The overall conclusion is that for biological resources, including protected species, the

range-wide implementation of Strategy B may be somewhat less beneficial than the proposed action.

Alternative Management Strategy C

The aggregate effects on biological resources, including protected species, that would occur if Management Strategy C were implemented range-wide would be similar to those for the proposed action, but with a few notable exceptions. While the proposed action would restrict wood collection and native wood campfires in Management Unit 1, range-wide application of Strategy C would allow for collection of dead and downed wood and native campfires within this unit. This could be less protective for the former Tinajas Altas Mountains ACEC portion of this management unit, where collection of dead and downed wood is currently prohibited. However, wood consumption would also likely be monitored in this high-use area and restrictions implemented as resource conditions dictate. Likewise, the proposed action would not allow rockhounding in Management Units 2 and 3 and Strategy C would allow this activity in those units. However, associated effects on biological resources would be minimal. The proposed action involves the development of an ecosystem monitoring system within the context of the greater Sonoran Desert Ecoregion, whereas Strategy C does not. The proposed action also includes several objectives for soil and water resources that Strategy C does not, including conducting a range-wide soil survey that would provide valuable information about the relationship between soil and vegetation types, temporarily restricting vehicular and construction activities to prevent soil erosion, and restoring areas where vehicle use has caused excessive surface damage. Conversely, it includes objectives for air and visual resources management that the proposed action does not, although these objectives are not as closely tied to potential biological resource effects as those related to soil and water resources.

Alternative Management Strategy D

The additive beneficial effects of implementing Strategy D range-wide could be somewhat greater than those that would occur if the proposed action were implemented. The most important distinctions between the proposed action and Strategy D with regard to biological resources relate to the lower levels of public access and use that would be allowed under Strategy D. Under this strategy, there would be 107 more miles of roads closed than with the proposed action, allowing natural or augmented revegetation to benefit an upper estimate of the road and associated shoulder area of 389 acres. Special use permits would be required for vehicle-based camping in excess of seven consecutive days within a 28-day period, instead of 14 consecutive days and for single parties with 10 or more vehicles. This could translate into lower levels of disturbance of biological resources located near vehicle-based campsites used for extended periods and/or by larger group sizes. There would be a minimum of six law enforcement officers required, which is a measure that would ensure that personnel resources are available for enforcing resource management and protection provisions. Rockhounding would be prohibited, and (if a proposal to the Arizona Game and Fish Commission were approved) the BMGR could be closed to non-game species collection. Recreational shooting would also be prohibited until an assessment of the appropriateness of allowing this activity in designated areas were conducted. Wood cutting, gathering, and native wood campfires would be prohibited range-wide. In addition, no future utility/transportation corridors would be permitted (including the Yuma ASH). This strategy proposes implementation of augmented restoration/remediation of closed roads (where feasible) in addition to vegetation and wildlife habitat restoration efforts for areas that have been damaged by a discontinued military, agency, or intensive public use. Each of these individually leads to some localized benefits for biological resources. As with the proposed action, aggregate effects on biological resources could result from the shift of some activities from dispersed areas to more concentrated areas or designated areas (i.e., camping and recreational shooting).

The approach to wildlife water developments would be to suspend new water developments for the first five years of the INRMP and, during that time period, conduct literature research and studies to further understand the benefits and effects of wildlife water developments; future developments would be dependent upon the findings. Suspending rather than allowing wildlife developments during the first five years of the INRMP may be less beneficial to some targeted species and other species that could

benefit from the six water developments included in the proposed action. Although there are some 40 existing wildlife water developments that are currently available to these species throughout the BMGR, the new carefully considered water developments could be of benefit to some species that are potentially at risk of serious decline in the event of an extended drought. On the other hand, any negative impacts that could occur in association with these developments that could be implemented under the proposed action-including those related to construction activities and perceived negative impacts from predation, competition, direct mortality, and disease-would not occur.

When considered together, the conclusion can be drawn that for biological resources, including protected species, Strategy D is very similar to the proposed action but may provide some additional long-term benefits as a result of an increased emphasis on monitoring and adaptive management.

Alternative Management Strategy A (No-Action Alternative)

Implementation of the no-action alternative would result in the continued management of natural resources under guidance from the Goldwater Amendment, HMPs, and various compliance decisions. The provisions of these plans, as modified to comply with the requirements of the Sikes Act, would be adopted by DoD agencies. The aggregate effects of the no-action alternative on biological resources would differ from those of the proposed action as a result of differing proposals for public use and access and resource management. This alternative would not provide the potential benefits of the proposed action except as related to the benefits of ongoing management actions that would be common to both alternatives. Some aggregate benefits could result from the combined effects of existing use management and resource management objectives and policies. Further, as the transportation plan that had been prescribed in the Goldwater Amendment was developed, it is possible that a reduction in the road network eventually would occur and result in some of the same benefits as the proposed action in relation to road closures.

White-lines sphinx moths are among the more than 2,500 known pollinator species in the Sonoran Desert.

Existing wildlife and wildlife resource provisions of the no-action alternative, to a large extent, focus on single-species management (for high-priority species, such as Sonoran pronghorn and desert bighorn sheep), rather than biodiversity and ecosystem management principles. The no-action alternative would also provide less monitoring and adaptive management based on key indicators of environmental health than under the proposed action. All of the former special management areas would be redesignated as special natural/interest areas and applicable special management provisions would be retained. The need for a special hunting permit program that requires payment of nominal fees to be used for the protection, conservation, and management of wildlife including habitat improvement and related activities on the BMGR would not be assessed nor would any related action be taken. The effects of non-game species collection on wildlife, habitat, and other resources would not be evaluated nor would any related action be taken.

In terms of type of use, the no-action alternative would have consequences similar to Alternative Management Strategy B, with a few exceptions. Some road closures eventually could be implemented under the no-action alternative, after development of a transportation plan. The extent of this effect cannot be foreseen. Also, unlike Strategy B, the no-action alternative does not include an evaluation of and potential to designate ORV use areas or allow public entry to mines.

As compared to the proposed action in aggregate, the no-action alternative may not be as potentially beneficial to wildlife and wildlife habitat as the proposed action because those elements of the proposed action that may offer additional benefits are not included in this strategy. However, in aggregate, the no-action alternative is regarded as being generally protective of wildlife and wildlife habitats.

Wildfire Management and Grounds Maintenance

Proposed Action

The proposed action would result in two types of potential beneficial effects on wildfire management and grounds maintenance: (1) studies, surveys, evaluations, plans, and coordination that would focus on vegetative communities, which in turn, could influence wildfire management and grounds maintenance activities; and (2) resource management activities that potentially would have a secondary wildfire management effect.

Proposed increases in surveys/studies, plans, and coordination would benefit wildfire management by providing resource managers with the most up-to-date information about ecological conditions of the range, which would be helpful to prevent and fight wildfires. The most beneficial objective for wildfire management would be the proposed development of a range-wide fire management plan based on the indications of the best known science and management practices that establishes fire prevention, suppression, recovery, mapping, monitoring, and possible mitigation protocols for both human- and non-human-caused fires in accordance with the threat to human life, property, and natural and cultural resources. Other proposed resource management activities would decrease opportunities for invasive plant species proliferation, increase recreation services and use supervision in a manner that would potentially decrease the potential for wildfires to occur due to improperly maintained campfires, and reduce the locations in which campfire-induced wildfires could be started. In aggregate, the wildfire management practices under the proposed action would have a favorable effect on the prevention of and fight against wildfires on the range as opposed to the current level of wildfire management. The fire management plan and invasive species control procedures both potentially could result in changes to grounds maintenance procedures and might require funding beyond existing grounds maintenance budgets.

Alternative Management Strategy B

Under Management Strategy B, benefits over the current level of wildfire protection would be similar to those of the proposed action and include implementation of a wildfire management plan; surveys for the presence and proliferation of invasive plant species; and potential increased coordination with local, non-BMGR firefighting departments. However, Strategy B would lack some of the potential benefits of the proposed action related to recreation use supervision and would have less potential to identify problem areas because fewer inventory activities are prescribed under this strategy.

Alternative Management Strategy C

The range-wide effects on wildfire management and grounds maintenance from Strategy C would be very similar to those of the proposed action.

Alternative Management Strategy D

Compared to the proposed action, Management Strategy D would result in similar levels of implemented studies, assessments, evaluations, and management activities that would be beneficial to the prevention and/or suppression of wildfires. Thus, there is no measurable aggregate difference in impacts of this strategy and the proposed action to wildfire management or grounds maintenance.

Alternative Management Strategy A (No-Action Alternative)

The range-wide application of the no-action alternative would differ from the proposed action in that there would be fewer studies, evaluations, and management actions related to the prevention and/or suppression of wildfires. Existing wildfire management would continue to focus on the suppression of wildfires with the lowest acreage loss and in the most cost-effective and efficient manner. Management objectives under the no-action alternative would not result in aggregate impacts on grounds maintenance protocol, but the lack of monitoring efforts could mean that potential problem areas would not be identified as quickly as with the proposed action.

Public Utilities and Transportation Corridors

Proposed Action

The most important effect of the proposed action on public utilities and transportation corridors is that all future utility/transportation corridor

development would be restricted to the existing State Route 85/railroad corridor, except for the proposed Yuma ASH corridor for which an application was filed prior to 6 November 2001. Construction of overhead transmission lines and non-military underground facilities along the State Route 85/railroad corridor would continue to be restricted in the same manner as under existing management policy. The proposed action includes a management objective to establish a protocol consistent with NEPA and other regulatory requirements for reviewing/approving proposed actions within existing corridors.

Other potential consequences of the proposed action on public utilities would be minor, individually and in aggregate, but may include restricting future development or changing management practices due to biological resource or soil resource management objectives, which could affect corridor maintenance activities. For example, the proposed action would include developing strategies to eradicate and/or control invasive species, which potentially could change management measures for roadside weed control. Another example is that erosion control policies could preclude maintenance activities when areas are vulnerable to erosion, such as after a rain. Proposed management provisions for perimeter land use, encroachment, and regional planning would also create a potential for the Marine Corps and Air Force to have a greater influence with regard to compatible off-range utility/transportation corridor development and projects.

Alternative Management Strategy B

Alternative Management Strategy B provides an option for considering the siting of additional new utility/transportation corridors, other than the Yuma ASH, within the BMGR. Additional utility/transportation corridor proposals would be evaluated on a case-by-case basis, but would not necessarily restrict utility development to the State Route 85/railroad corridor as outlined in the Goldwater Amendment. Given the current and foreseeable military use of the range, however, it is unlikely that new corridor alignments through the BMGR would be found to be compatible with its military purposes. Although to a lesser degree than with the proposed action, the provisions of Strategy B for biological resources and erosion control could also affect corridor development and management (for example, the invasive species control policy would be the same as for the proposed action). The provisions for perimeter land use, encroachment, and regional planning coordination would have similar potential impact as the proposed action in improved compatible utility/transportation corridor development and projects.

The Southern Pacific Railroad north of the BMGR, in combination with Interstate 8 and some canals, forms one of the major transportation/utility corridors in the region.

Alternative Management Strategy C

This strategy would have minimal differences in the aggregate effects on transportation/utility corridors as compared to the proposed action. The only notable distinction is that there would be slightly less potential for biological and soil resource policies, but slightly more potential for visual resource policies that could affect corridor development and management.

Alternative Management Strategy D

No new utility or transportation corridors (including the Yuma ASH within the western boundary of the BMGR) would be permitted within the BMGR under Strategy D. Prohibiting development of the Yuma ASH within the range boundary would cause an increase in costs associated with the need to establish a different route for the highway and have the potential to cause major delays in the Yuma ASH construction because much of the planning work for this highway already has been completed. Otherwise, this management strategy would have similar, but somewhat more pronounced, aggregate impacts as identified for the proposed action, principally because additional visual resource management objectives could impose an additional constraint on future utility or transportation projects in the existing State Route 85 corridor.

Alternative Management Strategy A (No-Action Alternative)

The no-action alternative would continue existing management of the State Route 85/railroad corridor and provides an option for considering the siting of additional utility/transportation corridors, other than the Yuma ASH, within the BMGR. Otherwise, the aggregate effects of the no-action alternative would not differ measurably from those of Alternative Management Strategy B.

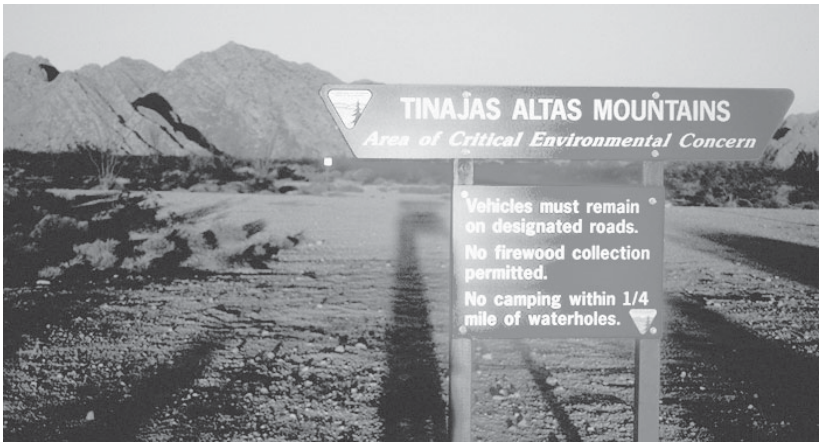
Special Management Areas

Proposed Action

Under the proposed action, the ACECs and HMA would be redesignated as special natural/interest areas, but not the SRMAs or Backcountry Byway. Existing management provisions would be retained for the HMA. The former ACECs (redesignated as special natural/interest areas) and the former SRMAs and Backcountry Byway would be managed in accordance with the new management provisions associated with the proposed action. The only changes in recreation use management would occur in the publicly accessible portion of the redesignated Mohawk Mountains and Sand Dunes ACEC and the portion of the Tinajas Altas Mountains ACEC in Management Unit 2 , where collection of dead and downed wood for campfires would be instituted in lieu of the current policy that prohibits wood collection in these areas. There would be an approximately 32 percent reduction in road network mileage open to use within redesignated ACEC special natural/interest areas, which would reduce impacts from vehicles and vehicle-associated activities. Additional management provisions could be implemented for the areas redesignated as special natural/interest areas. The potential need for establishing additional special natural/interest areas or altering the boundaries of the existing areas would be evaluated.

Alternative Management Strategy B

Under Strategy B, the HMA would be redesignated as a special natural/interest area, but ACECs, SRMAs, and the Backcountry Byway would be allowed to expire. Existing management provisions would be retained for the HMA, and management of the former ACECs, SRMAs, and Backcountry Byway would be affected by the provisions of the other 16 resource management elements. These potentially would result in decreased management of these areas, particularly with regard to road management, use of dead and downed wood, and vehicle-based camping, and in potential increased management from other resource elements (e.g., resource monitoring, waste disposal rules and regulations, erosion control, etc.). There would be no prescribed evaluation of the need to establish additional special natural/interest areas or altering the boundaries of the existing areas.



The Tinajas Altas Mountains ACEC and other ACECs would be redesignated as special natural/interest areas under several of the alternatives.

Alternative Management Strategy C

Because Strategy C was selected as the proposed action for most of the resource management elements, the range-wide implementation of Strategy C would be similar to the proposed action. Implementing Strategy C range-wide would result in somewhat fewer management actions for those resource management elements for which Strategy D was selected for the proposed action. In particular, the use of dead and downed wood for campfires would potentially be allowed throughout the former Tinajas Altas Mountains ACEC. However, additional management provisions could be implemented for the redesignated special natural/interest areas, particularly if resource use exceeds sustainable levels.

Alternative Management Strategy D

Strategy D would redesignate the ACECs, HMA, SRMAs, and Backcountry Byway as special natural/interest areas. Existing management provisions would be retained for the HMA. Management of the other redesignated special natural/interest areas would be affected by the other 16 resource management elements, but the intent would be to retain the management legacy

established by the BLM through the Goldwater Amendment. There would be further benefits from reduction of roads and associated activities within special natural/interest areas, including an estimated 42 percent reduction of road networks within redesignated ACECs. Additional management provisions could be implemented for the redesignated special natural/interest areas. The potential need for establishing additional special natural/interest areas or altering boundaries of the existing areas would be evaluated.

Alternative Management Strategy A (No-Action Alternative)

Under the no-action alternative, the ACECs, HMA, SRMAs, and Backcountry Byway would be redesignated as special natural/interest areas and the existing management provisions would be applied to these areas. Existing management of special management areas and effects thereof would continue, including the existing prohibition on collecting dead and downed wood for campfire use in the ACECs and within 150 feet of the Backcountry Byway. The existing road network would be retained and low-level dispersed impacts associated with vehicle use of these roads and other connected activities such as vehicle-based camping also would continue within the redesignated special natural/interest areas.

Public Access, Recreation, and Health and Safety

Proposed Action

BMGR Public Access and Recreational Opportunities: The greatest aggregate impact of the proposed action on recreational opportunities would regard recreational driving, as shown in Table 7. Off-road vehicle travel and on- and off-road racing would continue to be prohibited. The road network available for public motorized access would be reduced by 36 percent (mostly by closing redundant roads in localized areas, general access to all regions of the range currently open to the public would be retained), from 973 miles to 621 miles. Driving in washes would be prohibited unless the washes are part of the designated road system open to the public and are dry. A special use permit would be required for single parties with more than 10 vehicles (20 within Management Unit 2). Roads could be temporarily restricted when soils are at heightened risk for erosion. Most of the impact would be in publicly accessible units in BMGR—West, where 91 percent of the reduction in available public use road mileage would occur.

Recreation is popular on the range during the cooler seasons of the year.

Other aggregate impacts of the proposed action potentially would occur with regard to recreational camping opportunities. Vehicle-based camping opportunities would be eliminated along 352 miles of roads proposed for closure. Camping also would be restricted along certain retained road segments or campsites could be required to be more than 1/4-mile away from designated areas when these actions are needed for resource protection purposes. Similarly, if the six new wildlife waters that are proposed for development were constructed within publicly accessible portions of the range, they also would introduce new locations wherein camping within 1/4-mile would be prohibited in accordance with state law.

The opportunity for recreational wood gathering for campfires would continue to be restricted in certain areas, although the opportunity would be precluded based on management units, rather than by special land management designations. Although campfires would continue to be allowed, a new prohibition on the use of native wood for campfires would affect recreational opportunity within the publicly accessible portion of Management Unit 1. Related to this topic, the development of special management provisions as needed for resource protection within the proposed special natural/interest areas potentially could translate into additional future restrictions on recreational opportunities within these areas.

New restrictions on rockhounding would not only limit the amount of rock material that could be removed by handpicking for non-commercial use, but would also prohibit the activity within

about half of that portion of the BMGR that is generally open to public access. New restrictions would be introduced to require a special use permit for the firing of automatic weapons or the use of firearms between sunset and sunrise, prohibit the use of metal detectors (often used for recreational treasure hunting), and prohibit mine exploration. Based on available data about recreation use of the range, activities related to each of these three recreational opportunities are infrequent among past and current range users. Finally, changes in recreational opportunity could result from the findings of several assessments that are called for under the proposed action (a special hunting program that may assess a nominal fee for hunting, a study of nongame species collection that may place restrictions or limitations on this activity within the authority of state law, and a study of the appropriateness of establishing designated camping or recreational shooting areas). Additionally, if the findings of the inventory and monitoring efforts reveal that deleterious effects on natural or cultural resources are occurring as a result of recreation use, adaptive management responses could modify, limit, or restrict recreational opportunity to address identified resource conservation and protection problems.

BMGR Recreational Setting: The aggregate effects of the proposed action would not be expected to result in dramatic changes to the recreational setting of the BMGR from the existing condition. The recreational setting of the BMGR would continue to be relatively wild in character with a sense of remoteness and seclusion dominant in many areas accessible to the public. Although the proposed action would result in mixed effects on the recreational setting, overall the balance of the aggregate impacts would be a recreational setting in which natural environmental conditions are more dominant, but where there may be increased evidence of other recreational users and land management/recreation use supervision.

BMGR Recreation Use: As a result of the proposed action, there could be some increases or decreases in recreation use of the BMGR. In aggregate, there is a greater potential for decreased use than increased use as a result of the management objectives identified for the proposed action. However, over time, BMGR recreation use rates are expected to increase independent of the proposed INRMP as a result of regional population growth and trends toward increased participation in outdoor recreation activities. The greatest potential for decreased recreational use of the BMGR potentially would result from less visitation by those that recreate on the range in a manner that would be impacted by the proposed reduced road network. Likewise, opportunities for rockhounding, camping, exploring mines, or treasure hunting would be restricted or eliminated, and a special use permit would be required for certain types of recreational shooting and for groups with larger numbers of vehicles. Such decreases in visitation most likely would occur within BMGR–West, where almost 91 percent (or 320 miles) of the decrease in the available public use road mileage would occur.

BMGR Recreation Management: The proposed action would result in the use of a limits of acceptable change approach to managing some recreation activities. This change would be intertwined with other proposed changes to specific management tools. For example, there would be an improved record keeping system to track recreation use trends and proactively manage recreation use to minimize conflicts

Some roads on the range were restricted during the 1990s to protect sensitive resource locations or to restrict military vehicles from selected areas that were not needed for current ground-based training activities.

between recreation use opportunity and resource protection and conservation. A permit system would continue to be a key recreation management tool, and would be added to in order to inform the public about road restrictions and resource sensitivities. Special use permits would be required for more activities. The erection of gates and fences to control entry would decrease unauthorized use of the range and provide a more complete account of all recreation use on the BMGR. Likewise, coordinating with adjacent land managers would provide additional tools for BMGR and adjacent land managers to better respond to the recreational use needs while also protecting natural and cultural resources.

For the most part, the effects of the proposed action most likely would be in the form of additional rules and regulations and the means for enforcing them. A minimum of six full-time law enforcement positions dedicated to the BMGR would be retained, which would continue to be an advantage for managing recreation use. The workload and findings of the assessments called for with regard to the special hunting program, non-game species collection, designated camping and shooting areas; monitoring native wood supplies in high-use areas; and requirements for signs and other measures to indicate road restrictions also could impact recreation management. There would also be a change in focus from increased regulation within former ACECs and along El Camino del Diablo Backcountry Byway to the unit-specific enforcement of restrictions and prohibitions. However, additional management provisions could be adopted and rules and regulations could be expanded within the proposed and any future special natural/interest areas.

Recreation Outside of the BMGR: As a result of some of the proposed management actions, some recreational users may visit non-BMGR locations for outdoor recreation opportunities that would no longer be available or more strictly controlled on the BMGR. Recreation use of the Imperial Sand Dunes Recreation Area, which offers diverse recreational driving and ORV use opportunities, or other areas in the region may increase as a result of the proposed motorized access objectives for the BMGR. The results of the special hunting program (if it were to result in the assessment of a nominal fee for hunting on the BMGR) and recreational shooting assessment (if it were to result in the restriction/prohibition of recreational shooting on the BMGR) similarly could displace use from the BMGR to nearby lands.

Another effect on recreation outside of the BMGR potentially would result from the establishment of the Cabeza Prieta NWR bypass roads. Discontinuation of routine use of these roads by Border Patrol would be favorable to recreational users of the refuge wilderness setting. Coordination with adjacent land managers for the benefit of natural resources could also potentially influence outdoor recreation outside the BMGR.

Public Health and Safety: The proposed action and other alternatives for the proposed INRMP have been prepared to support public access and use that is consistent with the primary military safety requirements of the BMGR. Each of the alternatives is designed to protect public health and safety by prohibiting public access to targets areas, laser use areas, or other military hazard locations (see Figure 5). The rules of conduct that are presented under the proposed action-such as restricting access to mines, implementing sewage disposal rules, prohibiting wood cutting, prohibiting metal detectors-would reduce some of the risks associated with visitor activities and would also reduce the risks associated with unique safety hazards on the BMGR, such as unexploded ordnance. The proposed management objectives potentially could cause a decrease in the potential for public safety-related incidents on the range. Aggregate effects resulting in these benefits are related to the reduced potential to encounter military ordnance; improved motorist navigation through signs and enhanced visitor education policy; no safety hazards related to authorized entry of mines; no metal detector associated hazards (such as digging up buried ordnance); fewer health and/or safety risks associated with wood collection, sewage disposal, and other activities; and prevention of aircraft accidents by prohibiting additional overhead transmission line corridors.

All visitors face health and safety risks related to the natural hazards of the BMGR, such as extreme high temperatures, lack of water, venomous wildlife, and rugged terrain. The proposed action would mitigate these hazards somewhat through enhanced visitor education, law enforcement, and road navigation aids. Enhanced law enforcement would also reduce

the risks visitors face from the criminal or negligent activities of others, although such threats are not currently known to be a prevalent problem on the BMGR. The proposed assessment of recreational shooting activities could also benefit public safety. The principal safety concern associated with recreational shooting regards automatic weapons use, but the requirement of a special use permit to use automatic weapons would address this concern.

Overall, the proposed action would enhance the public health and safety of the range, as it would maximize the potential reinforcement of public health and safety issues as compared to the other alternatives.

Alternative Management Strategy B

BMGR Public Access and Recreational Opportunities: There would be no change in public access or recreational opportunities related to the existing road network, associated vehicle-based camping, and other recreational activities with Alternative Management Strategy B. In comparison to the proposed action, 352 miles of existing roads would remain open to the public. The road network available to the public could even be expanded through motorized public travel in designated washes and potential development of additional roads for recreational purposes. There could be less of an impact on larger groups as a special use permit would not be required for a single party unless the party had 30 or more vehicles. There would also not be the restrictions and limitations on recreational shooting, treasure hunting with metal detectors, camping, and entry to mines, or potential effects following further assessment on recreational shooting and camping. However, the potential effects would be the same as the proposed action for hunting and non-game species collection. There would be greater opportunity for wood cutting, gathering, and use than under both the proposed action and the current conditions.

BMGR Recreational Setting: As compared to the proposed action and the existing conditions, the aggregate effect of Management Strategy B on the recreational setting potentially may be negative. Expanded vehicular use opportunities could increase the physical evidence of vehicle traffic on the range environment and diminish primitive character. Vehicle-based camping would be allowed within 100 feet of established roads rather than 50 feet, which could further disperse and seclude campers from other users, but would also extend the effects of vehicle traffic through a wider corridor. An ORV use area, if established, would further alter and detract from the natural setting of the affected locality. Although first constrained by the military mission, new transportation/utility corridors potentially could be established, which would have site-specific impacts on the recreational setting.

BMGR Recreation Use: In contrast to the proposed action, there would not be any expected changes in recreation use patterns compared to existing conditions from implementing Management Strategy B. However, if an ORV use area were established there might be increased recreation use due to the relatively high demand and short supply of such opportunities in the BMGR region. The same effects on recreation use that could occur with the proposed action as a result of assessments–including nominal hunting fees and limitations or restrictions on non-game species collection (within the authority of state law)–could also occur under this strategy.

BMGR Recreation Management: As compared to the proposed action, there would be fewer changes to recreation management under Strategy B. For the most part, recreation management would occur based on current programs without a limits of acceptable change approach. As no special management provisions would be continued for the expired ACECs, SRMAs, and Backcountry Byway and no other special natural/interest areas would be established, all recreation management would be based on either a range-wide or a unit-by-unit basis. The same potential effects as assessed for the proposed action with regard to a special-fee hunting program and non-game species collection could occur, within the authority of state law. Management on a regional scale likely would be less effective because the objectives for coordination with adjacent land owners and managers would be more limited in scope than that of the proposed action.

Recreation Outside of the BMGR: None of the management actions that were identified as potentially causing increased use in other recreational lands in the vicinity of the BMGR would occur with Management Strategy B, with the exception of actions that could be taken based

on proposed assessments (the establishment of a special hunting program with a fee or limitations or prohibitions on non-game species collection on the BMGR), which could similarly divert associated activity to BMGR perimeter lands. Conversely, if an ORV use area were established or entry to mines allowed, there might be less ORV travel and entry to mines in lands in the vicinity in favor of exercising these opportunities on the BMGR. The same effects as described for the Cabeza Prieta NWR bypass road would occur with this strategy.

Public Health and Safety: The range-wide application of Management Strategy B would not cause an appreciable change from the existing condition in terms of public health and safety standards, with the exception that designating a public ORV area (should designated use areas be approved in the future) could increase risks associated with ORV use. Management Strategy B would not provide for the additional safety benefits that would potentially occur with the proposed action, but the denial of public access to high hazard areas of the military range would be the same (see Figure 5).

Alternative Management Strategy C

BMGR Public Access and Recreational Opportunities: There would be few differences in the potential aggregate effects on outdoor recreation from Alternative Management Strategy C as compared to the proposed action. In comparison to the proposed action, there would be similar recreational opportunities under Strategy C. However, there would be fewer restrictions on rockhounding and wood gathering and there would be no restriction on the use of native wood for campfires in any portion of the range.

Entering long-abandoned mines is currently prohibited for safety reasons, but authorization for recreational visits to these sites is under consideration in the EIS at public request.

BMGR Recreational Setting: In terms of recreational setting, there is almost no difference in predicted aggregate effects of Management Strategy C as compared to the proposed action. There might be less dust with Strategy C because palliatives could be applied on heavily traveled roads and, as a more intense visual resources management program would be implemented, there might be greater protection of visual resources as compared to the proposed action.

BMGR Recreation Use: There would be no measurable difference between the aggregate impacts on BMGR recreation use between the proposed action and Strategy C.

BMGR Recreation Management: There would be no measurable difference between the effects on BMGR recreation management between the proposed action and Strategy C.

Recreation Outside of the BMGR: The management actions that were identified as potentially causing increased use in other recreational lands in the vicinity of the BMGR with the proposed action would also likely occur with Strategy C. The same effects as described for the Cabeza Prieta bypass road for the proposed action would also occur with this strategy.

Public Health and Safety: For public health and safety, there would be no meaningful differences in aggregate impacts between the proposed action and Strategy C.

Alternative Management Strategy D

BMGR Public Access and Recreational Opportunities: In comparison to the proposed action, Alternative Management Strategy D would restrict motorized access and associated vehicle-based recreational opportunities from an additional 67 miles of existing roads currently accessible to the public (about 19 percent more than would be closed with the proposed action). Strategy D would also eliminate all opportunities for rockhounding or for wood cutting, collection, and native wood campfires range-wide. At least until an assessment of recreational shooting could be completed, opportunity for this activity also would be precluded. Following the assessment, any opportunity for recreational shooting would be limited to designated areas. In addition, a special use permit would be required for visitor stays in excess of seven

consecutive days rather than 14 days and for single parties with 10 or more vehicles range-wide (including in Unit 2).

BMGR Recreational Setting: The aggregate effects of Management Strategy D on the recreational setting would be similar to those of the proposed action. There are a few differences, which in aggregate would result in a more natural setting than the proposed action. In the areas accessible to the public, there would be 67 more miles of roads closed and restored (either naturally or by augmented means) under this strategy, which would increase the potential for encounters with other users to a slight degree as compared to the proposed action. At least during the first five years of the proposed INRMP, no new wildlife waters would be constructed. The character of the natural setting may also potentially be somewhat further protected as the result of more aggressive air quality and visual resources management as compared to the proposed action.

BMGR Recreation Use: As compared to the proposed action, there potentially could be greater decreases in recreational use of the BMGR due to the somewhat increased limitations on recreational opportunities.

BMGR Recreation Management: Strategy D would be expected to have most of the same impacts as the proposed action with regard to recreation management. Comparatively, there would be a greater number of prohibitions and restrictions to enforce, including a prohibition on wood cutting, gathering, and native wood campfires. Although there would be a shift in management focus from special management areas to the proposed INRMP management units, the expired SRMAs and Backcountry Byway would also be designated as special natural/interest areas (in addition to the former ACECs) and additional special management provisions could be created for these areas.

Recreation Outside of the BMGR: There would be a slightly greater potential for prospective BMGR recreational users to visit non-BMGR locations in order to obtain outdoor recreation opportunities that would no longer be available or more strictly controlled on the BGMR under Strategy D, as compared to the proposed action. There would be no benefit to recreational users of the Cabeza Prieta NWR wilderness setting because the refuge bypass road would not be developed.

Some attraction sites within the range are visited regularly by recreationists.

Public Health and Safety: The range-wide application of Management Strategy D would have similar effects as the proposed action, but to a potentially slightly greater extent.

Alternative Management Strategy A (No-Action Alternative)

BMGR Public Access and Recreational Opportunities: In comparison to the proposed action, the no-action alternative would not impose restrictions on motorized access and recreational opportunities. Although off-road vehicle travel would continue to be prohibited, there would be 973 miles of roads that would remain open to public use at least until a future transportation plan could be completed, whereupon at least some road closures, potentially similar to those of the proposed action, may be expected. There would be no change in current opportunities for camping (although the transportation plan eventually could affect vehicle-based camping opportunities similar to the effects of the proposed action, but perhaps of a differing magnitude); rockhounding; or wood cutting, gathering, and native wood campfires. Opportunities for recreational shooting also would continue unchanged except that automatic weapons use may not be found to be compatible with military safety. The no-action alternative would not initiate assessments of the potential effects of a special hunting program, non-game species collection, recreational shooting, or designated camping areas as could occur under the proposed action.

BMGR Recreational Setting: As compared to the proposed action, the no-action alternative would have no immediate effect on the existing recreational setting. However, a completed transportation plan eventually could have similar aggregate impacts on the recreational setting as

the proposed action with regard to motorized public access and unroaded area management.

BMGR Recreation Use: As compared to the proposed action, there would be less of a probability that recreation use rates would change as a result of implementing this strategy. However, if the transportation plan were finalized, there could be aggregate impacts on recreational use similar to those of the proposed action related to potential future road closures, although possibly of a different magnitude.

BMGR Recreation Management: The no-action alternative would continue existing programs. Tools for management, including recreation permit programs, visitor education and interpretation, and recreation use statistics would remain similar to existing programs, although they may change slightly from time to time as is currently the case. There would be no additional or revised rules or prohibitions to implement. Limits of acceptable change monitoring, which is part of the proposed action, would not be implemented. The expired ACECs, SRMAs, and Backcountry Byway would all be retained along with the special management provisions for these areas. Thus, some types of recreation management would continue to be somewhat defined by these areas rather than by the proposed INRMP management units. There also would be no minimum number of law enforcement officers, which could limit the effectiveness of enforcing the existing rules whereas the proposed action would be expected to improve law enforcement.

Recreation Outside of the BMGR: Under Strategy A, no change in recreation use in the vicinity of the BMGR would be expected, at least in the short term. However, similar to the proposed action, the future completion of a transportation plan may divert recreational driving use from the BMGR to off-range locations.

Public Health and Safety: The aggregate impacts for this management strategy would differ from the proposed action in that there would not be any change in existing public health and safety practices. However, as stated for the proposed action, the EIS for the proposed INRMP has been prepared to be consistent with all military safety requirements in order to avoid public health and safety issues. Although additional provisions to reinforce this standard are not provided for, the objectives, in aggregate, would accomplish the basic requirements.

Law Enforcement

Proposed Action

Implementation of the proposed action would be unlikely to have measurable, long-term impacts on DoD law enforcement actions and/or responsibilities on the BMGR. Changes to resource management policy and/or implementation of new limitations or restrictions on recreational activities on the BMGR could add to the current DoD law enforcement responsibilities, such as keeping visitors off of closed roads (an effect that would be expected to lessen over time as vegetation grows in closed roadbeds) and new proposed policies (e.g., restricting camping in areas of resource sensitivity, restricting native wood fires in Management Unit 1, and restricting recreational shooting). Increased responsibilities would be alleviated by the retention of a minimum of six full-time law enforcement positions on the range. The Border Patrol would benefit if site-specific planning results in construction of the Cabeza Prieta NWR bypass roads because this would eliminate the need to use administrative roads in the wilderness during routine surveillance and reduce conflict between the Border Patrol mission requirement and the Cabeza Prieta NWR Wilderness management mandate. These effects, individually and in aggregate, would be minor.

Alternative Management Strategy B

Law enforcement under Management Strategy B, would not differ notably from the current conditions. There would be a commitment to retain a minimum of two full-time law enforcement positions for the range. The impact relative to the Cabeza Prieta NWR bypass roads would be the same as with the proposed action.

Alternative Management Strategy C

There would be little difference in the DoD law enforcement effects described for the proposed action and those that would result with the range-wide application of Management Strategy C. Compared to the proposed action, there would be fewer visitor restrictions, but the differences would be negligible.

Alternative Management Strategy D

The range-wide application of Management Strategy D would result in a higher degree of resource protection, with more rules and restrictions, as compared to the proposed action. While there would be added responsibilities for the law enforcement officers, there would be at least six full-time law enforcement officers to do the work. No Cabeza Prieta NWR bypass roads would be developed, and therefore, the potential benefit described for the proposed action would not occur.

Alternative Management Strategy A (No-Action Alternative)

Impacts to law enforcement under the range-wide application of Management Strategy A for each of the resource management elements would not differ from the current condition.

Transboundary and Domestic Perimeter Land Use

Proposed Action

There are two categories of additive/interactive effects of the proposed action for the 17 resource management elements that could affect perimeter and transboundary land use: (1) those activities that are likely to occur on adjacent lands because of the proposed action and (2) land management decisions based on shared data between BMGR land managers and adjacent land managers.

While individually, the proposed changes in BMGR management policy may not discourage some visitors from recreating on the range, the combination of policy changes potentially could result in recreationists choosing to visit an off-range location within the region rather than the BMGR. However, any impact on perimeter lands would be minor and, over time, predominated by trends that indicate an overall increase in outdoor recreation throughout the BMGR region.

The increased natural and cultural resource knowledge and data gathered through the activities proposed with increased monitoring, wildlife water development research, special status species surveys, soil surveys, and increased coordination with off-range managers would benefit both BMGR managers and the various land managers in the region.

Alternative Management Strategy B

As opposed to the proposed action, when considered together, the effects of implementing Management Strategy B range-wide for the 17 resource management elements possibly could result in more recreational use of the BMGR and less use of adjacent lands. Any increase in recreational use of the BMGR cannot be determined, but likely would be minor and, over time, predominated by trends that indicate an overall increase in outdoor recreation throughout the BMGR region.

Several of the management provisions for Strategy B could improve coordinated land management between the various land managers of the region, although to a lesser degree than the proposed action.

Alternative Management Strategy C

There would be very few differences in aggregate effects between the proposed action and the range-wide application of Strategy C and the minor differences would not likely result in a different aggregate effect on land use in the area compared to the proposed action.

Alternative Management Strategy D

The aggregate effects associated with Management Strategy D would also be similar to those of the proposed action, but there would be more restrictions on recreational use. These more restrictive policies could discourage visitation to the BMGR and increase visitation in other areas within the BMGR region. The degree of change cannot be quantified; however, it is expected to be minor overall, but greater than that of the proposed action. Over time, changes in use likely would be predominated by trends that indicate an overall increase in outdoor recreation throughout the BMGR region.

Regarding the management provisions that would increase knowledge about the resources and encourage better coordination with other regional managers, Strategy D is the same as the proposed action with the exception that Strategy D includes additional air and visual resource management objectives. Nonetheless, the aggregate benefits for perimeter lands would be essentially the same as described for the proposed action.

Alternative Management Strategy A (No-Action Alternative)

Alternative Management Strategy A would not change existing perimeter and transboundary land use policies or relationships. Thus, no change in visitation patterns to the BMGR or other locations within the BMGR region would be attributed to Strategy A. Established coordination efforts between BMGR and regional managers would be expected to continue, but no increased efforts would be made in coordination or in expanding the understanding about range resources would be proposed.

Cultural Resources

Proposed Action

The elements of the proposed action that are projected to have the most beneficial impacts on cultural resources are resource inventory and monitoring, and recreation services and use supervision. These elements of the plan would work together to better characterize and address sources of impacts and address them accordingly. The assessment of the impacts of dispersed recreation on cultural resources has not been previously assessed and such an assessment would be a major benefit, as would the implementation of a monitoring strategy based on a limits of acceptable change framework.

Other elements of the proposed action that are projected to have beneficial effects on cultural resources are special natural/interest areas, and motorized access and unroaded area management. Redesignation of the expired Tinajas Altas Mountains ACEC as a special natural/interest area is likely to promote continued protection of the sensitive cultural resources in that area.

Cultural remains are found throughout the BMGR and are vulnerable to damage or theft.

Reducing motorized access is expected to lead to a decline in indirect, inadvertent damage and intentional vandalism that commonly correlates with motorized access. The extent of such impacts is not well documented, but these types of impacts typically are not mitigated and any reduction would be an important benefit.

Elements of the proposed action that are projected to result in slightly beneficial impacts on cultural resources are recreational shooting; utility/transportation corridors; soil and water resources; visual resources; wildfire management; and perimeter land use, encroachment, and regional planning. All of the proposed actions for these elements would promote conservation of cultural resources but the managed activities do not appear to be sources of substantial impacts and therefore the benefits are unlikely to be substantial.

The camping and visitor stay limit element of the proposed action is projected to have slightly adverse impacts on cultural resources, similar to those that currently occur from these activities that may affect surface features. These impacts would stem from the ground disturbance of vehicle-based camping along road margins, and any secondary inadvertent damage or intentional vandalism stemming from camping. The proposed action would involve an assessment of camping activities in order to assess the effects of designating camping areas. There are essentially no data to assess the impacts of one element of the plan–hunting and non-game species collection–but information would be collected under the proposed action.

Alternative Management Strategy B

Management Strategy B was selected as the proposed action for three resource management elements–hunting, visual resources, and wildfire management–and, thus, would have the same effects which vary from having no data for an impact assessment to a slightly beneficial effect on cultural resources as the proposed action for these elements. As with the proposed action, Strategy B is projected to have beneficial effects for the resource inventory and monitoring element of the plan. Strategy B would likely also result in slightly beneficial effects, similar to the proposed action, with regard to utility/transportation corridors; soil and water resources; visual resources; wildfire management; and

perimeter land use, encroachment, and regional planning. Like the proposed action, the elements of Strategy B that are projected to have no effect on cultural resources include rockhounding; wood cutting, gathering, and firewood use, and collection of native plants; general vegetation, wildlife, wildlife habitat, and wildlife waters; special status species; and air resources.

From the perspective of cultural resource conservation, four elements of Alternative Management Strategy B are less preferred than the proposed action. The recreation services and use supervision element of Strategy B is projected to have more adverse than beneficial impacts compared to the proposed action. Also, the special natural/interest areas and motorized access and unroaded area management elements of Strategy B are projected to result in slightly adverse impacts rather than the beneficial impacts of the proposed action. In contrast to the slightly beneficial impacts of the proposed action for the recreational shooting element, Strategy B is rated as having "no data" for an impact assessment and, unlike the proposed action, none would be collected.

Alternative Management Strategy C

From the perspective of cultural resource conservation, the impacts of Management Strategy C would be the same as the proposed action.

Alternative Management Strategy D

From the perspective of cultural resource conservation, the impacts of Management Strategy D would be the same as the proposed action.

Alternative Management Strategy A (No-Action Alternative)

The one element of the no-action alternative that has been selected to be included in the proposed action is air resources, which is not projected to have impacts on cultural resources. For 11 other elements, the effects on cultural resources would be the same under Strategy A as they would be with the proposed action.

From a cultural resource perspective, Strategy A is less preferred than the proposed action with regard to the five other plan elements. Under Strategy A, impacts on cultural resources for motorized access and unroaded area management, and recreation services and use supervision are projected to result in adverse impacts in contrast to the beneficial impacts of the proposed action. The wildfire management and perimeter land use, encroachment, and regional planning elements of Strategy A are projected to result in slightly adverse impacts instead of the slightly beneficial impacts projected for the proposed action. In contrast to the slightly beneficial impacts of the proposed action for the recreational shooting element, Strategy A would not include collecting data on recreational shooting practices within the BMGR so there would be no data for an impact assessment.

Visual Resources

Proposed Action

The changes in management prescribed by the proposed action would be expected to primarily benefit visual resources by reducing the manmade modifications associated with some types of use and providing resource management direction that would help to conserve and protect the visual qualities of the BMGR. Generally, the visual setting and viewer expectation would be expected to shift from a more semi-primitive setting toward a more primitive setting. Various elements of the proposed action would change viewsheds principally by eliminating roads from the landscape, allowing and/or promoting natural restoration of discontinued use areas, and creating larger blocks of unroaded areas. In doing so, it would also eliminate some viewpoints that are currently accessible by vehicle. Some site-specific actions would have the potential to detract from the natural conditions in local areas (e.g., potential establishment of designated camping areas and/or recreational shooting areas, allowing the establishment of the Yuma ASH), which generally would be balanced in that viewer expectations would equate with the given use. Existing visual resource management objectives would be continued. The visual effects of new actions would be evaluated as required by regulatory compliance processes and needed management or mitigation actions would be implemented.

Alternative Management Strategy B

The aggregate visual resource impacts from Strategy B would differ from the proposed action in that manmade modifications poten-

BMGR landscapes provide many high quality unmarred natural vistas.

tially would be more evident. Management Strategy B would allow for the creation of new roads, thus contributing to a visual resource setting where manmade changes are more predominant. The same impacts with regard to the development of the Yuma ASH would occur and potential additional utility/transportation corridor projects could have similar impacts. As compared to the proposed action, potential adverse effects on the visual setting could occur from not restoring former use areas, potentially establishing ORV use areas and designated camping areas, and other less comprehensive recreation services and use supervision objectives. Visual resource management objectives would be the same as those of the proposed action.

Alternative Management Strategy C

There would be very little difference between the aggregate effects on visual resources described for the proposed action and those that would result with the range-wide application of Management Strategy C. However, in addition to the visual resource management objectives included in the proposed action, the visual effects of new actions would be assessed by adopting and using BLM's visual resource management objectives.

Alternative Management Strategy D

This management strategy would protect the existing scenic quality of the BMGR to a greater extent than the proposed action by further reducing or limiting the level of manmade modifications, promoting some restoration of scenic qualities, and including management practices that consider visual resources at a landscape scale. There would be additional proposed road closures, restoration of closed roads, no recreational shooting, no development of the Yuma ASH within the BMGR, and new wildlife water developments would be suspended for five years. Similar to the proposed action, designated camping sites could be established under this strategy with the same potential impacts on visual resources. The visual effects of new actions would be assessed by adopting and using BLM's visual resource management objectives, with additional considerations for visual resource qualities of unroaded areas.

Alternative Management Strategy A (No-Action Alternative)

The impacts of the no-action alternative on visual resources would differ from the proposed action in that there would be no reduction in the evidence of manmade modifications and visual resource management would be conducted in accordance with the Goldwater Amendment. Retaining the existing road network and types and levels of dispersed recreation uses would result in no change in the semi-primitive visual setting, viewsheds, or viewer expectations. However, with the eventual implementation of a transportation plan, as prescribed in the Goldwater Amendment, visual resource effects associated with road closures may ultimately be comparable to the proposed action. As with the proposed action, wildlife waters would be constructed (although up to 17 could be implemented with this strategy), the Yuma ASH would be constructed (and potentially additional utility/transportation corridors), no prescribed restoration of closed roads or former use areas would occur, and visual resource management policies would continue (which do not include an objective to assess the visual effects of new actions).

Hazardous Materials and Wastes

Proposed Action

As a result of the proposed action, there could be minor changes in hazardous materials and waste generation, exposures, and management on the BMGR. Increased emphasis on visitor education and law enforcement patrols would increase deterrence of unintentional and intentional disposal of hazardous materials or wastes. Special use permit requirements for stays longer than 14 days within a 28-day period and for single parties with more than 10 vehicles (20 vehicles in Management Unit 2) could minimize the potential for hazardous materials or waste dumping on the BMGR. By reducing the road network by about 30 percent, there would be potential decreases in the area in which a release of hazardous materials or wastes transported by vehicles might occur (because littering and incidental chemical or petroleum releases from vehicles would no longer accumulate along closed roads). Designated areas for recreational shooting and camping, if established, would introduce areas of concentrated sources of human sewage, trash, vehicle fluids, and lead

bullets. Conversely, by allowing the Yuma ASH to be constructed as planned, there would be a new transportation route potentially used for hazardous materials and waste transport and an associated potential for accidental releases within the BMGR.

Alternative Management Strategy B

Retaining and potentially expanding the existing road network under Management Strategy B would maximize the opportunities for public access to a greater portion of the range than with any of the other alternatives. The more extensive road network, together with the more comprehensive number of recreational opportunities allowed in comparison to the other alternatives, could attract larger numbers of range visitors. Also, Strategy B would not require a special use permit until a single party included 30 or more vehicles and would require a minimum of only two law enforcement officers to patrol a large area. To the extent that these factors correlate with incidental and intentional inappropriate waste disposal, there would be reduced potential to prevent hazardous material and waste exposures as compared to the proposed action.

Alternative Management Strategy C

There would be no notable difference in potential consequences of implementing Strategy C for hazardous materials and waste as compared to the proposed action.

Alternative Management Strategy D

The application of Management Strategy D range-wide would have similar but slightly better effects than the proposed action in limiting the risk of a release of hazardous materials or waste. This is because a special use permit would be required for visitor stays exceeding 7 days and for single parties with more than 10 vehicles (except by special use permit), which could minimize the quantity of waste on the BMGR. As with the proposed action, the increased emphasis on visitor education and law enforcement patrols potentially would increase deterrence of unintentional and intentional disposal of hazardous materials or wastes. More roads would be closed under Strategy D than any other alternative, thereby minimizing the extent of locations where wastes might be disposed as well as the area to be patrolled by law enforcement officers.

Alternative Management Strategy A (No-Action Alternative)

The aggregate impacts for this management strategy would differ from the proposed action in that there would not be any change in existing hazardous materials and waste practices. There would be no change in the road network in the short term and no localization of impacts from camping and recreational shooting activities to designated areas. Allowing large party sizes (up to 49 vehicles) without a special use permit and the lack of a minimum number of law enforcement positions would reduce the potential to minimize illegal disposal compared to the proposed action.

Socioeconomic Resources

Proposed Action

Implementation of the proposed action likely would create minor direct beneficial socioeconomic effects by increasing work and expenditures within the socioeconomic study area. The operating budgets of the Air Force and Marine Corps range management functions are expected to be adjusted to implement the proposed INRMP. However, as with all federal budgets budgeting for implementation of the proposed INRMP would be subject to Congressional funding.

Visitation and recreational use of the range potentially could decrease in response to implementing some resource management elements, such as limitations on rockhounding, recreational shooting, and the time that a visitor may camp in one location. Both individually and in aggregate, however, such a decrease would have minor socioeconomic consequences and should not result in a perceptible change in visitor use, number of jobs, or consumer activity in the area. The overall trend of increasing outdoor recreation use in the BMGR region would be expected to predominate over this potential effect. The proposed action is generally consistent with most public attitudes and values for those resource categories where, through scoping and ongoing public and agency input, there is a clearly expressed public opinion such as resource monitoring; special natural/interest areas; recreation services and use supervision; vegetation and

Cities and small towns in the BMGR region have experienced unprecedented growth in recent years.

wildlife; special status species; soil and water resources; and perimeter land use, encroachment, and regional planning.

Alternative Management Strategy B

Employment, earnings, and expenditures under Strategy B would also not be expected to appreciably differ from the existing conditions, but would be expected to be less than those that would be associated with the proposed action as Strategy B calls for fewer studies and less active management. This strategy reflects public viewpoints expressed during scoping that generally support the philosophy of allowing public access and use opportunities to increase, remaining compatible with a sustained healthy natural environment, and continuing most existing conservation management practices.

Alternative Management Strategy C

There would be very little difference between the socioeconomic effects described for the proposed action and those that would result with the range-wide application of Management Strategy C. The greatest difference is that there potentially would be slightly less work and expenditures with the application of Strategy C than with the proposed action. The philosophy of this strategy, a balance between access and use opportunities with a shift toward resource protection and conservation management practice, is probably the most reflective of the public opinion, which is similar to the proposed action since it incorporates much of Strategy C.

Alternative Management Strategy D

Management Strategy D would result in work and expenditures to accomplish studies, assessments, and evaluations similar to the proposed action. Because this management strategy would maximize resource protection and conservation management practices at the expense of some public access and use opportunities, it would have the potential to decrease BMGR visitation and the secondary socioeconomic impacts of purchases made in the nearby communities to a slightly greater extent than the proposed action, but any impact would still be minor. In comparison to the proposed action, this management strategy would have negative socioeconomic impacts with regard to utility/transportation corridors in that it would not allow for the establishment of the Yuma ASH as currently planned.

Alternative Management Strategy A (No-Action Alternative)

The socioeconomic impact of the no-action alternative would differ from the proposed action in that there would be less work and expenditures associated with the studies, evaluations, and assessments called for with the proposed action. As reflected by public scoping comments, the majority of attitudes and values support the development of a new plan that provides for improved conservation and recreation management. A frequent theme of public and agency input during the INRMP planning process was that the existing plans are not excessively flawed, but their implementation suffered from insufficient funding.

Noise

Proposed Action

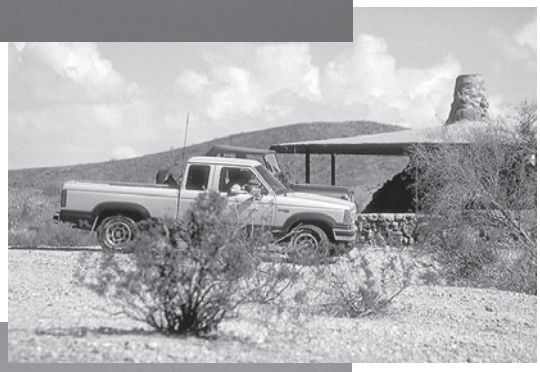
Noise in the BMGR environment is caused predominantly by aircraft overflights and other military operations that would continue regardless of the alternative selected for the proposed INRMP. Based on the management objectives associated with the proposed action, the most likely aggregate effects would include some localized reductions in the volume of noise produced by some recreation activities, such as recreational driving, recreational shooting, and limitations on party sizes without a special use permit. All of the noise effects of the proposed action, which would include potential noise decreases and increases, would be localized in scope. None of the elements of the proposed action would have effects, either alone or in aggregate, that impact widespread portions of the BMGR or alter the overall noise environ-

ment of the range relative to any of the standards used to protect public health and welfare with an adequate margin of safety.

The proposed action principally would affect noise generated through the use of vehicles as a result in the elimination of certain roads from the BMGR road network. Noise generated by vehicle traffic on BMGR roads is too limited in terms of traffic volume to be of concern relative to standards for protecting human health, welfare, and comfort. Although it may be important to those who are seeking an experience of solitude and natural quiet on the BMGR, because of its status as a military range, natural quiet is not an acceptable management standard for the BMGR. Nonetheless, some noise reductions would result, in part, from road closures and associated reduction in vehicle use in affected areas. Potential noise increases would occur as a result of the proposed action if the Yuma ASH were constructed across the northwestern corner of the BMGR and if special use permits for the recreational use of automatic weapons within the range were issued. The redesignation of three current special management areas as special natural/interest areas would have the potential effect of deterring the location of new noise-generating military activities within these areas.

Alternative Management Strategy B

The overall noise effects of Alternative Management Strategy B provisions would represent a potential increase over the aggregate effect of the proposed action, but would not measurably differ from the existing conditions. Strategy B would retain the entire existing road network, potentially support off-road vehicle use areas, allow vehicle use in washes, allow up to 30 vehicles per single party, and support recreational use of automatic weapons. The aggregate noise effect of these provisions would be manifested principally in local areas of Management Units 1 and 2 where the most extensive and dense public use road networks are located (see Figure 5). Alternative Management Strategy B would also have the effect of not redesignating current special management areas, which would eliminate the potential for deterring new noise-generating military surface uses from these areas. In addition, Strategy B would support the consideration of new transportation corridors within the BMGR if conflicts with military activities would not occur. The potential that such corridors would be either proposed or approved seems remote, but this provision potentially could introduce additional transportation noise within the BMGR interior.



Military and other government flight operations, which are the principal sources of noise within the BMGR, are not subject to management through the proposed INRMP. Proposed road and visitor use management provisions would affect locally generated vehicle noise but would not appreciably affect the overall noise environment.

Alternative Management Strategy C

The aggregate noise effects of the Alternative Management Strategy C would be essentially the same as those for the proposed action.

Alternative Management Strategy D

The aggregate noise effects of Alternative Management Strategy D generally would be similar to those of the proposed action; however, Strategy D includes several provisions that may reduce the generation of surface noise in local areas to a somewhat greater extent than would the proposed action. Strategy D would redesignate all existing special management areas as special natural/interest areas, which may have the effect of deterring new ground-based military activities from these locations; thus, this action may prevent the introduction of a new

source of surface noise in these areas. However, this would be unlikely to have an aggregate effect on noise when added to the effects of the other provisions of Strategy D. The aggregate noise effects of Alternative Management Strategy D provisions on motorized recreational access and other vehicle-associated recreation activities would not differ greatly from those of the proposed action. The 18 percent increase in road closure mileage that would occur in Management Unit 2 under Strategy D as compared to the proposed action would provide some additional reductions in the noise generated by recreational vehicles, but this decrease would not be notable except in local areas where vehicle access is eliminated. The seven-day camping stay limit under Strategy D, as compared to the 14-day stay limit under the proposed action, would also have the potential for reducing visitor-generated noise in local areas. However, because long-term camping has not been a frequent activity within the BMGR, this difference would not appear to be important in terms of aggregate noise effects. Strategy D would have the positive noise prevention benefits of foreclosing the possibilities for authorizing recreational use of automatic weapons or constructing the Yuma ASH on the BMGR. The aggregate noise effects of Alternative Management Strategy D would not differ from the proposed action in terms of its other provisions.

Alternative Management Strategy A (No-Action Alternative)

The aggregate noise effects of the no-action alternative would be essentially the same as those for Alternative Management Strategy B.

Environmental Justice

The EIS evaluates potential environmental justice impacts in accordance with guidelines that set forth a screening process to identify and analyze potential environmental justice concerns. The first step is a screening-level analysis prior to scoping to determine the existence of a low-income and/or minority population within the area of potential effect. Because there is no population within the BMGR, the area of potential effect for the EIS is limited to those communities on the BMGR perimeter that may be influenced by BMGR management practices and those who visit the BMGR for outdoor recreation or other compatible uses. While the proposed INRMP was foreseen as having few direct effects or indirect effects on any population, there are some communities within this area of potential effect with a population that is disproportionately minority or of low-income, including three Native American tribes and the U.S./Mexico border element. Thus, the Air Force and Marine Corps enhanced their outreach efforts during the scoping process for the EIS to ensure that the potentially affected communities were informed of the initiation and intent of the project. The intent of this increased scoping was to ensure that low-income and minority populations were engaged in public participation and to identify and assess any unforeseen potential impacts on these communities.

The next step in this process is to evaluate whether or not the environmental impacts are likely to fall disproportionately on minority and/or low-income members of the community and/or tribal resources. Based on the detailed analysis, most of the identified potential effects would not extend beyond the BMGR boundary. Those that would are limited to the direct and indirect impacts from natural resource management jobs and expenditures and to the population that visits the BMGR. This potential socioeconomic impact is expected to be positive. With the proposed action, there would be a mixed effect for those that visit the BMGR because there would be more limited recreation access and use opportunity based on the road closures and other limitations on recreation use; this may be viewed as adverse to some, but this is balanced with a more natural recreational setting that may be viewed as beneficial to others. Based on available data (including the scoping comments and Core Planning Team input through the INRMP planning process) knowledge gained through other environmental justice efforts relative to the BMGR and the analysis contained in this EIS, there is no indication that the proposed action, alternative management strategies, or no-action alternative would disproportionately affect low-income or minority communities. Thus, there is no environmental justice effect with the proposed action, alternative management strategies, or no-action alternative.

The one specific environmental justice concern that has been identified is adequate consultation regarding impacts on cultural, historical, or protected resources of value to Native American tribes. This concern is first addressed in the range-wide goal that is satisfied with the proposed action, alternative management strategies, and no-action alternative alike-to provide for Native American access to Traditional Cultural

Places and sacred sites, consistent with the military mission and natural resources management goals. The ICRMP addresses the management of cultural resources within the BMGR and will be incorporated by reference in the proposed INRMP. In addition, the Air Force and Marine Corps have been engaged in consultations with Native American tribes throughout the INRMP and separate ICRMP processes. Based on the responses received from this effort, the proposed action and Alternative Management Strategies C and D are regarded as generally consistent with the views expressed by the participating tribal representatives. Alternative Strategy B may be inconsistent with these views in that it potentially would allow for some expanded use opportunities, such as designated ORV use areas, and would implement fewer controls on recreational uses. Alternative Strategy A would also be somewhat inconsistent in that it would not provide for a minimum number of law enforcement officers and would also not have the same extent of controls on recreational uses as the proposed action or Alternative Strategies C and D.

What Would Be the Cumulative Environmental Effects?

What are Cumulative Effects?

Cumulative effects are defined as those additive or interactive effects that would result from the incremental impact of proposed actions when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Through the cumulative effects analysis, the predicted individual and aggregate resource effects of proposed actions are placed in context with all the other past, present, and reasonably foreseeable future factors that are also affecting the environment. Over recent years, cumulative effects analysis has been increasingly regarded as important to the goal of using EISs as tools for better decision making about the consequences of proposed actions on the environment.

Proposed actions together with other past, present, and reasonably foreseeable future actions may generate cumulative effects at individual resource, ecosystem, and human community scales. The draft EIS considers potential cumulative impacts at each of these scales. However, because the ecosystem and human community scales are the most relevant to assessing the potential cumulative effects of the proposed INRMP, the discussion of cumulative effects in this Community Report is limited to these scales. The focus in this report on these scales of analysis reflects the programmatic nature of the proposed INRMP and the fact that:

- the proposed action and each of the alternatives considered for the proposed INRMP are principally programmatic in scope and, with the exception of the alternative management strategies for motorized access, do not describe site-specific actions
- each of these actions, including those that would manage public access and recreation, was designed to be consistent with the military purposes of the BMGR and the over arching policy-based goals established for rehabilitating, conserving, and protecting its resources
- a principal requirement of the proposed INRMP is the implementation of ecosystem management principles
- the planning time horizon for the proposed INRMP is the year 2024, the duration of the BMGR land withdrawal, but the INRMP vision, as expressed through its policy-based goals, is to implement management actions that would support healthy ecosystem functions and protect biodiversity over the expanse of the range for a much longer time span
- with the exception of the alternative management strategies for motorized access, the individual and aggregate effects of the proposed action and alternatives would generally be broad in scope; site specific impacts on individual resources generally cannot be predicted
- the aggregate effects of the proposed action and alternatives are beneficial for natural and cultural resources as well as for the protection and conservation of biodiversity within the BMGR and the greater ecosystem

How Cumulative Effects were Assessed

Four steps were used in the draft EIS to determine the cumulative effects that would result from the implementation of the proposed action and alternatives being considered for the proposed INRMP. These steps include:

- identify the aggregate effects of the proposed action and the alternatives on each resource impact assessment category considered
- identify the collective effects of other past, present, and reasonably foreseeable future actions on each resource impact assessment category
- combine the aggregate effects of the proposed action and each alternative with the additive or interactive effects of past, present, and reasonably foreseeable future actions to define the total cumulative effect on each resource that would result from implementing the proposed action and each alternative
- define the cumulative effects of the proposed action and each alternative at the ecosystem and human community scales

While the draft EIS provides the details of the cumulative effects analysis, what is important to note here is that 68 past, present, and reasonably foreseeable future actions were incorporated in the assessment. These actions began with European settlement and early ranching and mining development within the region that started as early as the mid-1800s. The assessment covers the growth of communities, transportation infrastructure, agriculture, and other industries during the periods prior to and since the establishment of the BMGR in 1941. Early dams and water diversions on the Gila and Colorado Rivers in the United States and the Rio Sonoyta in Mexico, which are important to the regional ecosystem, are also covered. A summary of historic military use of the BMGR is taken from a detailed summary of this use provided in Chapter 2 of the draft EIS. Future actions are limited to those that are reasonably foreseeable based on the information available.

Ecosystem Management

The fundamental purposes of the proposed INRMP are to provide for the conservation, rehabilitation, and protection of natural and cultural resources on the BMGR and sustainable multipurpose public use, to the extent activities are consistent with the military purposes of the range. These purposes are directly relevant to determining the cumulative effects of the proposed INRMP when considered together with other past, present, and reasonably foreseeable future actions. As presented in the draft EIS and this Community Report, the BMGR represents a fairly well protected and expansive environment that harbors some of the largest and least disturbed remaining tracts of indigenous Sonoran Desert. Some of the natural communities present on the range are the best surviving representatives of these community types in the Sonoran Desert ecoregion. This is not to say that the collective effects of past and present actions, including non-military activities, have not adversely affected the range environment. These effects are thoroughly reviewed in the draft EIS and were found to have had some adverse impacts on the ecosystem in which the range is located as well as on some of its human communities. The collective impacts of past and present actions have been limited, however, and available evidence indicates that overall the BMGR ecosystem remains relatively healthy and intact.

Therefore, the fundamental ecosystem management task for the proposed INRMP is principally to conserve and protect the components, structure, and functions of this ecosystem in support of the military purposes of the range. Rehabilitating some components of this ecosystem within the BMGR is also an important objective, but in many cases the impairment that this ecosystem has endured is from past and present activities that have occurred outside of the range. The conservation goals of the proposed INRMP nevertheless include rehabilitating damaged BMGR environments with the objective of enhancing the overall resiliency and biodiversity of the range ecosystem. At the same time, the proposed INRMP must support sustainable public access and multipurpose use of the range ecosystem consistent with the military mission and safety and security constraints. Towards these ends, the proposed action and each of the alternatives were developed with the objective of meeting the overall requirement of conserving, rehabilitating, and protecting the natural and cultural resources of the range while balancing opportunities for sustainable public access and use.

Aggregate Effects of the Proposed Action and Alternatives

The aggregate effects of the proposed action and alternatives for the proposed INRMP on individual resources within the BMGR are presented in Table 9. On overall balance public access and use supported by the proposed action and alternatives would be sustainable. However, because opportunities for public access and use would vary among the proposed action and other alternatives (particularly for recreational uses), they would likely prompt mixed levels of public satisfaction regarding the relative impacts of these alternatives on these opportunities. The proposed action or Alternative Management Strategies C or D would meet the INRMP goals for conserving, rehabilitating, and protecting the natural and cultural resources of the range. Alternative Management Strategies A or B would also likely meet the goal thresholds for conserving, rehabilitating, and protecting natural and cultural resources, but would not offer the increased level of benefits for meeting these goals that would be attainable under the proposed action or Alternative Management Strategies C or D. The proposed action or Alternative Management Strategies C or D would provide increased resource conservation, rehabilitation, and protection benefits, in part, at the expense of reduced public access and use opportunities. The reductions in these opportunities would result from road closures and limitations on certain recreation activities that would decrease the potential extent of road and vehicle associated impacts on natural communities and individual wildlife species; promote conservation of unroaded areas and, over time, increase the size of some existing blocks of unroaded landscape; and regulate activities that have some potential to impact selected resources. The increased levels of resource conservation, rehabilitation, and protection offered by the proposed action or Alternative Management Strategies C or D would also be enhanced by the emphasis within these management strategies on ecosystem and limits of acceptable change monitoring that would provide the necessary tools for effectively adapting management to changing conditions of increased or decreased resource threats.

The proposed action or Alternative Management Strategies C or D would likely have mixed effects in terms of public satisfaction about the relative balances struck between public access and use versus resource conservation, rehabilitation, and protection. This is because the many different groups and individuals concerned about the BMGR hold widely varying opinions about desirable recreational experiences and

Taken in aggregate, proposed INRMP provisions to manage public access, roads, wildlife habitats, and other resource elements and to enhance resource and ecosystem monitoring would benefit conservation, rehabilitation, and protection of natural and cultural resources.

conservation, rehabilitation, and protection needs. Most public viewpoints expressed by participants in the public involvement phases of the planning favored long-term conservation, rehabilitation, and protection of the natural cultural resources on the BMGR. Most recognized that some road closures and other measures that may affect their access or activities within the range would be necessary to achieve these management goals. However, strong differences of opinion were expressed regarding the degree to which closures and other measures would be needed. Some advocated a more primitive environmental setting where the number of roads would be sharply reduced and the scale of vehicle-based recreation would be limited or diminished. Others expressed strong preferences for the existing or near the existing level of motorized access and continued opportunities for vehicle-based recreation.

Alternative Management Strategies A or B would maintain or expand vehicle-based public access and use opportunities while pursuing resource conservation, rehabilitation, and protection goals without reductions in the road network or certain other limitations on recreational activities. The overall balances of Alternative Management Strategies A or B are shifted more in the direction of providing for public access than are the proposed action or Strategies C or D; as a tradeoff Strategies A or B would generally provide less resource conservation, rehabilitation, and protection benefits over the long-term than the proposed action or Strategies C or D. The aggregate effects of the no-action alternative (Strategy A) were found to be mixed for vegetation, wildlife, wildlife habitat, and protected species not because the provisions of this strategy would cause direct harm to these resources but because this strategy would fall somewhat short of the long-term goal of facilitating restoration and enhancement of the range ecosystem. This long-term projected deficiency arises because Strategy A would not implement the ecosystem monitoring tools, provided with increasing capabilities by Strategies C and D, that would enhance adaptive management efforts. Although Strategies A or B provide for more public access than the proposed action or

TABLE 9
SUMMARY OF MEANINGFUL AGGREGATE EFFECTS OF THE PROPOSED ACTION AND ALTERNATIVES ON INDIVIDUAL RESOURCES

Resource Impact Assessment Category	Area of Effect	Type of Effect				
		Proposed Action	Alternative Management Strategy A (No-Action)	Alternative Management Strategy B	Alternative Management Strategy C	Alternative Management Strategy D
Earth Resources	RW	⊙$_B$	○$_B$	○$_B$	⊙$_B$	●$_B$
Water Resources	RW	⊙$_B$	○$_B$	○$_B$	⊙$_B$	●$_B$
Climate and Air Resources	RW	ME	ME	□$_A$	ME	ME
General Vegetation	>RW	⊙$_B$	ME	ME	⊙$_B$	⊙$_B$
General Wildlife and Wildlife Habitat	>RW	⊙$_B$	ME	ME	⊙$_B$	⊙$_B$
Protected Species	>RW	⊙$_B$	ME	ME	⊙$_B$	⊙$_B$
Wildfire Management	>RW	⊙$_B$	NE	○$_B$	⊙$_B$	●$_B$
Grounds Maintenance	<MU	ME	ME	ME	ME	ME
Public Utilities and Transportation Corridors	>RW	□$_A$	□$_A$	□$_A$	□$_A$	□$_A$
Special Management Areas	RW	ME	ME	□$_A$	ME	⊙$_B$
Outdoor Recreation	MU	ME	ME	ME	ME	ME
Public Health and Safety	RW	⊙$_B$	NE	□$_A$	⊙$_B$	●$_B$
Law Enforcement	RW	ME	ME	○$_B$	ME	ME
Transboundary and Domestic Perimeter Land Use	>RW	ME	NE	ME	ME	ME
Cultural Resources	RW	⊙$_B$	□$_A$	□$_A$	⊙$_B$	●$_B$
Visual Resources	RW	○$_B$	○$_B$	○$_B$	⊙$_B$	●$_B$
Hazardous Materials and Waste	RW	ME	NE	□$_A$	ME	○$_B$
Socioeconomics	>RW	○$_B$	○$_B$	○$_B$	○$_B$	○$_B$
Noise	MU	ME	□$_A$	□$_A$	ME	⊙$_B$
Environmental Justice	>RW	NE	NE	NE	NE	NE

Type of Effect: Slightly Beneficial = ○$_B$ Beneficial = ⊙$_B$ More Beneficial = ●$_B$
Slightly Adverse = □$_A$ Adverse = □$_A$ More Adverse = ■$_A$
Mixed Effect (Includes mixed beneficial and adverse effects with no clear beneficial or adverse aggregate effect) = ME
No Effect = NE

Area of Effect: Smaller Than Management Unit = <MU Management Unit = MU Range Wide = RW Larger Than Range Wide = >RW

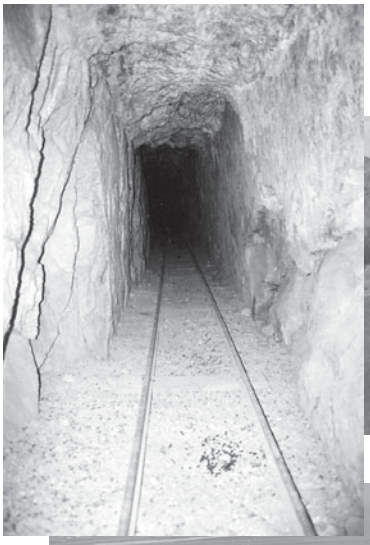
Strategies C or D, the aggregate effect of Strategies A and B on outdoor recreation were also found to be mixed because of differences in public opinion regarding the appropriateness of various recreation activities and the desirable characteristics of environments in which to pursue activities of their choice.

Effects of Past, Present, and Reasonably Foreseeable Future Actions

The collective effects of all past, present, and reasonably foreseeable actions on the ecological landscape and human community of the BMGR region are best summarized in terms that characterize how the current status of the region was shaped, its present ecological and human community conditions, and future activities that will likely influence its fate. This summary begins with past activities, moves forward to the present, and concludes with a look to the future.

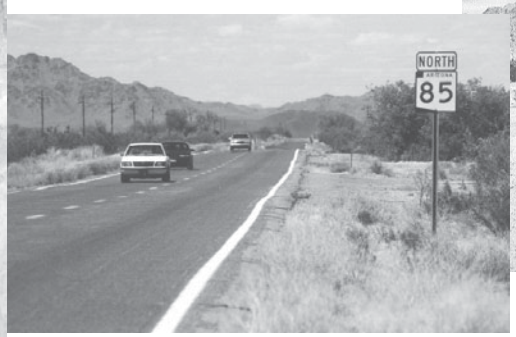
The earliest traceable human events in the BMGR region that began the process towards its present status were displacement or elimination of Native American cultures and land uses, first by Spanish settlement and economic development (1500s-1853) and then by American settlement and development following the Gadsden Purchase of 1853. Spanish economic and development activities were focused on farming, livestock grazing, and trade. These activities were expanded and accelerated in the region following the American acquisition of sovereignty. Since 1853, the principal centers of economic activity in the BMGR region have been Yuma, the Lower Gila River corridor in the vicinity of Wellton and Tacna, Gila Bend, Ajo, Sonoyta, and San Luis Rio Colorado. These communities and development areas were first linked by transportation corridors that originated as overland trails and wagon roads, were later expanded to include railroads, and eventually further developed to include modern two-lane and four-lane highways. The following key

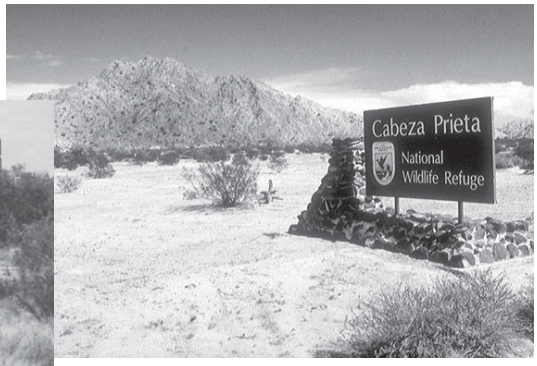
Some past and present actions have caused habitat fragmentation and loss, locally imperiled environments, and other long-term impacts. Designation of the BMGR, Cabeza Prieta NWR, and Organ Pipe Cactus NM, as well as habitat improvements and other management actions have offset some of the cumulative adverse effects of development within the regional ecosystem.



Historic mining.

Transportation corridors.

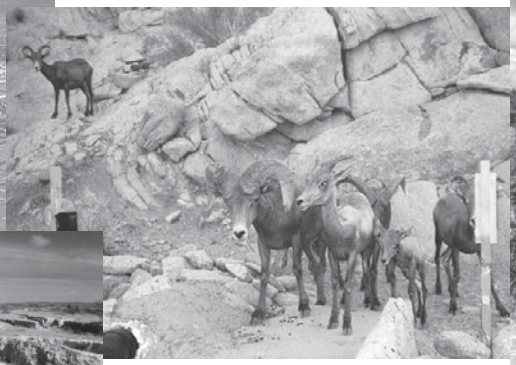




Protected area designations.

Agricultural and urban development.

Wildlife water developments.



Road accelerated erosion.

Historic ranching.

ecological effects have resulted from the collective effects of economic development:

- dewatering of the Gila River through impoundments and diversions
- conversion of Rio Sonoyta streamflows from perennial to intermittent due to groundwater pumping
- the loss of riverine and riparian habitat along these formerly perennial streams
- irreversible conversion of native Sonoran desert to agricultural, urban, and industrial purposes within the Yuma Valley, lower Gila River corridor, Gila Bend, Ajo, Sonoyta, and San Luis Rio Colorado areas
- development of transportation corridors linking the principal centers of economic activity
- livestock grazing within the interior of the region
- opening of the interior of the BMGR region as a result of unimproved road development to support livestock grazing, prospecting and mining, and land survey

As the result of these collective actions, structural and functional components of the region's ecosystem have been affected and somewhat diminished. Accordingly, its resiliency to resist, recover from, or adapt to impacts and climatic variability has also been reduced. The most critical effects of these actions have been the loss of riverine and riparian habitat, the loss of other habitats to agriculture and urban oriented activities, and the fragmentation of habitat from the development of major transportation corridors and irrigation canals. These outcomes have, in turn, impacted natural communities and selected wildlife species within the interior of the region, in part by retarding or curtailing wildlife movements and migrations. Further, these outcomes have limited or eliminated biologically productive and protective floodplain and bottomland habitats that were at least seasonally important to many upland wildlife species. The availability of riverine and riparian habitats have also been reduced, which impacted upland wildlife that utilize these very limited corridor areas directly or indirectly for support during certain phases in their life cycles. The ecological effects of this development on the perimeter of the BMGR region have been further exacerbated by the stresses induced by historic livestock grazing and the opening of the area to vehicle access through the development of backcountry roads.

In contrast to early development trends, three long-standing, land use designations–Organ Pipe Cactus NM, Cabeza Prieta NWR, and the BMGR–have provided resource conservation protection for much of the interior of the BMGR region. These designations, from the 1937 to 1943 timeframe, have collectively eliminated or prohibited appropriative land uses, such as livestock grazing, mining, and farming, from the region's 4,750-square-mile interior and have somewhat offset the adverse ecological effects of the economic development and population growth that has occurred on its perimeter. The national monument and wildlife refuge designations also placed resource protection and conservation at the core of land management priorities for about 40 percent of the region's interior. Military use of the BMGR has resulted in the impairment of some of natural and cultural resources but, with a surface use footprint that has affected less than 10 percent of the range area at low to high levels of surface disturbance and less than 3 percent of the area at moderate to high levels of disturbance, designation of the military range has also had the countervailing effect of protecting more than 90 percent of the area from the deleterious effects of long-term economic land use development.

As already described in this Community Report, the interior land area of the BMGR region also has an advantage associated with its surface hydrology that helps to insulate this area from potential impacts originating outside of its perimeter. The topography of the BMGR region, including Organ Pipe Cactus NM, Cabeza Prieta NWR, and the BMGR, is such that the headwaters of almost all surface water drainage from the region originates from within the region and drains to locations outside of the region. The only notable location that drains into rather than out of the region is the Growler Wash that flows into Organ Pipe Cactus NM from BLM lands located in the vicinity of Ajo. As a result of these drainage patterns, Organ Pipe Cactus NM, Cabeza Prieta NWR, and the BMGR are generally not vulnerable to surface waterborne impacts from sources of sediment, hazardous materials or wastes, or other contaminants that originated outside their collective boundaries.

The current relationship between the ecological conditions of the BMGR region and its human community is best characterized as one of growing tension. The tension is that between a fairly well protected and expansive core land area that continues to harbor a representative

cross section of indigenous Sonoran Desert natural communities and biodiversity that is surrounded by transportation corridors, centers of population, economic development activity, and cross-international boundary activities that threaten the long-term ecological health of the core. The collective effects of past, present, and reasonably foreseeable future actions on the human community are also divergent. On one hand, the economic development activities that have occurred within the region have provided humans livelihood and support for diverse cultural amenities. Prosperity over recent years has made, and will likely continue to make, these benefits increasingly available to a growing number of people. The extraction of these economic and other types of benefits from among the region's natural resources has, of course, not come without trade-offs. Development of the selected resource uses have come at the loss of other natural and cultural resource values with the consequence that those values are either no longer available or are available only in reduced quantity, quality, and locations for the enjoyment and benefit of the human community.

A case-in-point within the BMGR region is that of the Sonoran pronghorn. This endangered species continues to survive within the United States but marginally so and almost exclusively within habitat currently found in Organ Pipe Cactus NM, Cabeza Prieta NWR, and the BMGR. The relatively infrequent opportunity to observe these animals is welcomed by most visitors to these areas. In the late 1900s, the Sonoran pronghorn was much more widely distributed within the Sonoran Desert in both the United States and Mexico. Many factors have contributed to the decline of this species as described in the previous sidebar on the Sonoran pronghorn. In one of a number of management efforts to compensate for the aggregate losses incurred by this species, substantial portions of Organ Pipe Cactus NM, Cabeza Prieta NWR, and the BMGR are now closed to visitor use each year from 15 March through 15 July to increase the potential for Sonoran pronghorn fawn survival by decreasing the potential for harmful levels of harassment of fawns during a vulnerable point in their lives. The trade-offs to the human community have been the economic benefits gained from the modifications to the Gila River corridor and transportation developments.

The projected trends for future population and economic growth within the BMGR region promise to expand and exacerbate impacts on the regional ecosystem outside of the BMGR, Cabeza Prieta NWR, Organ Pipe Cactus NM, and Sonoran Desert NM. These trends will also bring increased pressure for recreational opportunities within this core complex of federal lands.

Cumulative Effects of All Actions

The aggregate effects of the proposed action and alternative management strategies must be combined with the collective effects of past, present, and reasonably foreseeable future actions to identify the cumulative effects of all actions. The aggregate effect of the proposed action and all alternatives when considered on the broader scales of the BMGR ecosystem and the human community are overall countervailing influences for the restoration of past damage, the management and regulation of ongoing use, and adjustments and adaptations in management for responding to future issues. For most resource categories, including those for vegetation, wildlife, wildlife habitat, and protected species, the aggregate effects of past and present actions have been adverse to at least some degree and in some cases, such as Sonoran pronghorn and some other protected species, these effects have also been significant. The cumulative impact of combining the proposed action or Alternative Management Strategies C or D with the effects of past, present, and reasonably foreseeable future actions would be beneficial for most individual resources in that these alternatives would encourage or facilitate improvements in the existing conditions of these resources. In contrast, the cumulative impact of combining Strategies A or B with the effects of past, present, and reasonably foreseeable future actions would benefit the existing conditions of fewer individual resources.

The aggregate effect of the proposed action and all alternatives when considered on the broader scales of the BMGR ecosystem and the human community are overall countervailing influences for the restoration of the effects of past damage, the management and regulation of ongoing use, and adjustments and adaptations in management for responding to future issues. In aggregate, each of these strategies provides for sustainable multi-purpose use without compromising resources. Strategies A and B, however, in comparison to the proposed action, Strategy C, and Strategy D, promise less effective management tools toward this end.

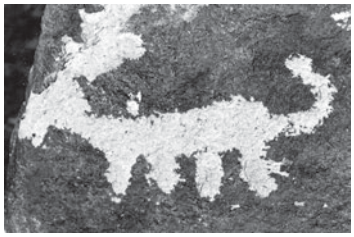
The aggregate effects of the proposed action or Alternative Management Strategies C or D,

when considered together with other past, present, and reasonably foreseeable future actions, would be beneficial for the greater BMGR ecosystem. Each of these alternatives emphasize ecosystem management principals and would exert countervailing influences on the range ecosystem that would further the long-term restoration of the effects of past damage. Each of these alternatives would also enhance the management and regulation of ongoing use, and provide for management adaptation to respond to emerging threats to natural communities and the broader ecosystem.

The cumulative effects of the proposed action or Alternative Management Strategies C or D, when considered together with other past, present, and reasonably foreseeable future actions, on the human community would be mixed. None of these alternatives would be likely to have a cumulative economic effect of a measurable magnitude, but each would impact public use of the BMGR. The provisions of the proposed action or Alternative Management Strategies C or D would continue to provide public access to the range but would reduce some opportunities for recreational driving activities and impose some new limitations on recreational activities in favor of enhanced natural and cultural resources protection and conservation. Although these changes would not be individually significant within the BMGR, these new restrictions, when added to constraints on some types of vehicle-based use in other public lands locations outside of the range, would further diminish these types of recreational opportunities available in the BMGR region. In contrast, these restrictions would favor the cumulative regional availability of non-vehicle-based recreation.

On overall balance, the aggregate effects of Alternative Management Strategies A or B, when considered together with other past, present, and reasonably foreseeable future actions, would likely fall short of providing the long-term benefits for the greater BMGR ecosystem that are the goal of the proposed INRMP. In some respects, the fact that these alternatives would not reduce the current extent of motorized access within the BMGR or implement positive controls on the proliferation of additional wildcat roads could result in long-term adverse ecosystem effects.

The cumulative effects of Alternative Management Strategies A or B on the human community would also be mixed and minor when considered together with other past, present, and reasonably foreseeable future actions. These alternatives would be beneficial for those who prefer vehicle-based recreational activities both within the BMGR and the region. Those members of the community who prefer recreational activities with less emphasis on recreational vehicle driving, however, would regard this effect as adverse.



Although somewhat compromised by the cumulative effects of past and current activities, the BMGR continues to exhibit good overall ecosystem health. Conservation, rehabilitation, and protection of this ecosystem would benefit from the proposed INRMP, which would also serve to mitigate some potential adverse effects from reasonably foreseeable future actions.

Footnotes

[1] P.L. 106-65 §3031(d) and (e)

[2] "Withdrawing" federal lands means to withhold them by executive or legislative action from settlement, sale, location, or entry under some or all of the general land, mining, and mineral laws in order to limit or prohibit activities normally permitted under those laws. The Defense Withdrawal Act of 1958 (P.L. 85-337) provides that an Act of Congress is required for land withdrawals for military purposes that are more than 5,000 acres in aggregate.

[3] "Reserving" federal lands means designating withdrawn areas for specified public (or governmental) purposes or programs. For example, military reservations established in areas formerly a part of the public domain consist of lands that have been withdrawn and then reserved, nearly always in the same executive or legislative action, for the purpose of military use.

[4] P.L. 106-65 §3031(a)(1) and (2)

[5] Restricted airspace is designated by the Federal Aviation Administration to denote airspace areas where military activities (such as aerial gunnery, artillery firing, or missile firings) can occur. Restricted areas are depicted on aeronautical charts to alert the crews of aircraft not participating in restricted airspace activities of the potential presence of such hazards. The Federal Aviation Administration delegates control of restricted airspace to the using military agency.

[6] P.L. 106-65 §3031(a)(2)

[7] P.L. 106-65 §3031(b)(3)(A)

[8] P.L. 106-65 §3031(b)(3)(E)(i)

[9] P.L. 106-65 §3031(b)(3)(D)

[10] 16 U.S.C. 670a (a)(1)(A) and (B)

[11] 16 U.S.C. 670a (a)(3)

[12] 42 U.S.C. 4332

[13] P.L. 106-65 §3031(a)(2)

[14] P.L. 106-65 §3031(b)(3)(D)

[15] P.L. 106-65 §3031(b)(3)(E)(i)

[16] DoD Instruction 4715.3

[17] P.L. 99-606

[18] P.L. 106-65 §3031(a)(1) and (2)

[19] P.L. 106-65 §3031(a)(1) and (2) and §3031(b)

[20] P.L. 106-65 §3031(b)(3)(A), (D), and (E)

[21] 16 U.S.C. 670a (a)(2)

[22] 16 U.S.C. 1531 et seq.

[23] 16 U.S.C. 703 et seq.

[24] P.L. 106-65 §3031(b)(3)(C), §3031(b)(1)(C) and (b)(7), and §3031(b)(2)(C)

[25] P.L. 106-65 §3031(b)(7)

[26] P.L. 106-65 §3031(b)(3)(A) and (B)

[27] P.L. 106-65 §3031(b)(4)(A)

[28] P.L. 106-65 §3031(b)(6)

[29] The three HE (high explosives) Hill targets on the BMGR are authorized for use with armed Mark (MK)-81, MK-82, MK-83, and MK-84 series of general purpose 250-, 500-, 1,000-, and 2,000-pound bombs.

[30] The Maverick missile is a rocket-propelled antitank weapon that is precision-guided to the target by television, laser, or infrared tracking, depending on the model. The maximum attack range of the Maverick is about 15 miles.

[31] P.L. 106-65 §3031(b)(3)(E)(i) and 16 U.S.C. 670a (a)(3)

List of Acronyms

ACEC	Area of Critical Environmental Concern
ACT	Air Combat Tactics
AFAF	Air Force Auxiliary Field
AFB	Air Force Base
AFI	Air Force Instruction
AFRC	Air Force Reserve Command
AGFD	Arizona Game and Fish Department
AGTS	Aerial Gunnery Target System
ANG	Air National Guard
ARNG	Army National Guard
ASH	Area Service Highway
AUX-6	Auxiliary Airfield 6
BEC	Barry M. Goldwater Range Executive Council
BLM	Bureau of Land Management
BMGR	Barry M. Goldwater Range
DART	Deployable Aerial Rigged Target
DoD	Department of Defense
EIS	Environmental Impact Statement
EOD	Explosive Ordnance Disposal
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FLPMA	Federal Land Policy and Management Act
GIS	Geographic Information System
GRMDS	Goldwater Range Measurement and Debriefing System
HE	High Explosive
HMA	Habitat Management Area
HMP	Habitat Management Plan
ICRMP	Integrated Cultural Resources Management Plan
IEC	Intergovernmental Executive Committee
INRMP	Integrated Natural Resources Management Plan
MBTA	Migratory Bird Treaty Act
MCAS	Marine Corps Air Station
MK	Mark
MLWA	Military Lands Withdrawal Act
MLT	Mobile Land Target
mm	millimeter
MSL	Mean Sea Level
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NM	National Monument
NOI	Notice of Intent
NPS	National Park Service
NWR	National Wildlife Refuge
ORV	Off-Road Vehicle
P.L.	Public Law
RMCP	Range Munitions Consolidation Point
ROD	Record of Decision
SRMA	Special Recreation Management Area
TAC	Tactical
TACTS	Tactical Aircrew Combat Training System
TIS	Tracking and Instrumentation Subsystem
UDA	Undocumented Alien
USFWS	U.S. Fish and Wildlife Service
UXO	Unexploded Ordnance
WTI	Weapons Tactics Instructor